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Volume VII **NOVEMBER, 1927** **Number 2**

EDITORIALLY SPEAKING 63

SOME PROBLEMS IN SCIENTIFIC STUDY OF CLASSROOM SUPERVISION . . . . . *A. S. Barr* 64

AN UNCAPITALIZED OPPORTUNITY IN ELEMENTARY EDUCATION . . . . . *William A. Cook* 70

TIME ANALYSIS OF ACTIVITIES IN HIGH SCHOOL PHYSICS . . . . . *J. M. Hughes* 75

A PROJECT IN TEACHER TRAINING . . . . . *Fred L. Teal* 80

AN EXPERIMENT IN THE USE OF VISUAL METHODS OF INSTRUCTION . . . . . *Howard Wilbur* 83

ANNUAL SURVEY OF TEXTBOOKS IN MATHEMATICS . . . *John R. Clark* 87

THE CLEARING HOUSE 93

AS REPORTED 98

THE READER'S GUIDE 103

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EDITORIALLY SPEAKING

THE BEST POSSIBLE ELEMENTARY SCHOOL

British education and American education proceed upon two very different hypotheses. The former is planned with the purpose primarily of training "leaders." The latter looks to the development of as high a degree as possible of social efficiency in the rank and file of the citizenship, on the supposition that leaders will come to the front of their own accord.

This difference appears strikingly in a recent article in one of the British newspapers. The writer bemoans the fact that not more than one of the Rhodes scholars has so far become widely known. He had supposed that the Rhodes scholars, after having had superior training at Oxford, would at once take their places as recognized leaders both in the domestic affairs of the United States and in international affairs.

Such a position seems to us naïve. We are accustomed to seeing our leaders appear from all walks of life, with and without a college education. We do not assume that a person who has attained a Rhodes scholarship will necessarily prove to be a great leader of men. We hold, moreover, with Dr. James E. Russell, that the education of followers—citizens who are competent to *choose* their leaders—is, in a country like ours, quite as important as attempting to prepare the leaders themselves. In a progressive, democratic society, universal common school education must, in the nature of things, be our first care. No degree of excellence in secondary or higher education can atone for weakness in the grades below.

This position to most Americans needs only to be stated, not defended. Nevertheless we have not framed a school policy in accordance with it. We cannot honestly say that we have the best possible elementary schools. The average of scholarship among elementary school teachers is not so high as it should be. Four years of college work should be the minimum. Professional training for all should be included in this period.

The elementary school should, moreover, be in a position to compete for the best talent with the high school. Competence is recognized in general by means of monetary reward, in education as well as elsewhere. So long as the prevailing salary schedules of elementary schools are lower than those of secondary schools, the latter can pick and choose. This is the "skimming" process deplored in these columns some time ago.

The general practitioner, in the next place, is gradually yielding to the specially trained worker in almost all lines of human endeavor. Other things being equal, the person who can concentrate upon a portion of the school course can master his field far better than one who must try to compass the whole of it. Without permitting over-specialization, the elementary school must find a way to divide up the work of a class among three or more teachers in such a way that unity of effort is preserved and at the same time a high degree of competence secured.

Such a division of labor calls for appropriate equipment. With the passing of the general practitioner, who tries to teach everything, must pass also the general classroom, partly equipped for all activities and not adequately equipped for any. Through limited specialization, actual economy in expenditure for equipment can be achieved while far more satisfactory conditions for class work are set up than now usually obtain.

These are a few of the considerations that should enter into a campaign for the development of the best possible elementary school in America. There are of course many others, particularly those relating to the curriculum and social life of the school. Enough has been said, however, to show that every loyal American should redouble his efforts to improve the common schools. This can be done and will be done without detracting in the least from the institutions higher up. The slogan should be, not better elementary schools at the expense of others because elementary schools are of first importance, but *the best possible elementary schools* in order that the foundations of cultured and responsible citizenship may be securely laid and the children of all the people well started in living the abundant life.

J. F. H.

SOME PROBLEMS AHEAD IN THE SCIENTIFIC STUDY OF CLASSROOM SUPERVISION

A. S. Barr

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Programs meant to make classroom supervision more scientific may start at any one of three points, namely: (1) the measurement of the kinds and amounts of changes produced in pupils; (2) the selection and gradation of subject matter; and (3) studies of the teaching process.[1]

Considerable progress has already been made in the scientific measurement of the results of instruction. If it were not for the fact that improvements in the products are dependent upon improvements in the process, scientific supervision might be considered synonymous with educational measurements. But supervision is a much more inclusive term than measurements, including the study of the teachers, the pupils, the materials of instruction, the learning processes, the teaching processes, and the results produced. But this is another story. More attention must be given in supervision to the scientific study of the

[1] There are, of course, other points of departure which have been ignored for the time being in this paper.

teaching process. It is with this problem that this article proposes to deal.

To begin with, let us imagine that we are actually seated in the classroom. We are observing an eighth-grade class in American history. The lesson is of the discussion type and has been preceded by several days of directed study. The topic under discussion is "Territorial Expansion." You are the supervisor; you want to help the teacher, and at the same time you want to be scientific. What are you to do?

There are several points of departure. You might ask the teacher to state her objectives. You could then ask the teacher to justify her objectives and to show that what she is doing bears upon the objectives stated by her. Such a discussion would probably be profitable. You might also find out how the teacher collects information about her pupils, what she knows about them, and to what specific uses this information is put. Similar studies might be made of the materials of instruction, the physical setting, the learning processes, and the teacher herself. But we have agreed to ignore (in so far as it is possible to do so) all of these aspects of teaching for the time being. We are interested in the teaching processes and in the improvement of teaching.

The teaching process as here defined includes the sum total of those activities performed by the teacher in bringing together pupils and subject matter under most favorable learning conditions. The transaction assumes objectives, carefully selected subject matter, a proper physical setting, a proper mental attitude on the part of the pupil; knowledge of the subject, the pupils, the learning processes, and the results; and an assortment of properly timed activities to be performed by the teacher herself. The process is by no means simple. The supervisor wants to be scientific.

Another point at which one might begin a program of scientific supervision is with a consideration of general teaching procedures. A number of experimental studies of the relative effectiveness of different teaching procedures are now available. A few titles are as follows:

Briggs, Thos. H. "The Effect of Latin Translations on English." *School Review,* Vol. 31 (Dec. 1923), pp. 756-762.

Clarahan, M. M. "An Experimental Study of Methods of Teaching German." *University of Missouri Bulletin,* Educational Series, Vol. I, No. 6. A comparison of the grammatical method with a direct reading method.

Dowd, Constance E., and Arlitt, Ada Hart. "The Relative Transfer Effects of Supervised Play and Formal Gymnastics." *Journal of Applied Psychology,* Sept. 1925, pp. 215-224.

Fletcher, W. H. "Translation Method of Teaching Latin." *Journal of Educational Psychology,* Vol. 21, Jan. 1920, pp. 1-15.

Gates, Arthur I. "Recitation as a Factor in Memorizing." *Archives of Psychology,* No. 40, Sept. 1917.

Germane, C. E. "Value of the Written Paragraph Summary." *Journal of Educational Research,* Vol. 3, pp. 116-123.

Henmon, V. A. C. "The Relation Between Mode of Presentation and Retention." *Psychological Review,* Vol. 19, pp. 79-96.

Jones, Harold E. "Experimental Studies of College Teaching. Effect of Examinations on Permanence of Learning." *Archives of Psychology,* No. 68, Nov. 1923.

Pechstein, L. A. "Whole vs. Part Method in Motor Learning." *Psychological Monograph Supplement* 22, No. 2, 1917.

Winch, W. H. "Children's Reasonings: Experimental Studies of Reasoning in School Children." *Journal of Experimental Pedagogy,* Vol. 6 (1921-22), Dec. 5, 1921, pp. 119-141; March 6, 1922, pp. 199-212; June and Dec. 1922, pp. 275-287.

If we assume that a body of material of this sort has been developed, the results of such investigations might then be brought to the teacher's attention and her work

modified accordingly. The results of her own teaching might be compared with those obtained under experimental conditions, or the teacher might be led to carry on experimental work of her own. The approach is scientific.

In time we should expect, returning to the subject of history, to have many scientific studies available and much more specific ones. These might deal with such problems as:

1. The relative effectiveness of X method and Y method of presenting picture materials to eighth grade pupils in American history.
2. The relative effectiveness of interrupted and uninterrupted topical reports (that is, reports definitely interrupted by questions by teachers and pupils).
3. The relative effectiveness of X means and Y means (there are many) of motivating work in American history.
4. The relative effectiveness of X and Y methods of making the assignment as measured in terms of the pupils' understanding of the assignment, the amount of motivation, and the resulting activity.
5. The relative effectiveness of X method and Y method of developing historical concepts, etc.

Work of this sort should do much to remove supervision and teaching from the realm of guess work and to create in teachers a better attitude toward it. But this approach, notwithstanding its helpfulness, is very general. Your supervisor is viewing a specific teacher, who has objectives, who has selected a specific type of subject matter, who has a specific group of pupils with whom she must labor, and who must carry on in a perfectly definite physical setting. Is this teacher making the best of her opportunities?

The situation can be made a bit more specific if it is approached from a slightly different point of view. Suppose that we approach it from the standpoint of standard items to observe. These items to observe are lists of evaluating statements indicating desirable practices in teaching. Let us illustrate from materials pertaining to the physical setting. The various items contributing to a most favorable physical setting such as light, heat, ventilation, etc., may be listed as follows:[2]

A Standardized Check List for the Improvement of Classroom Management

I. Heat and ventilation.
   1. The temperature should range from 67 to 70 degrees F.
   2. Rate of change of air should be such that each pupil gets from 1800 to 2500 cubic feet of air per hour.
   3. The air should be in motion.
   4. The humidity of the air should range from 40 to 60 per cent.
   5. When window ventilation is used, ventilation should be from both top and bottom of windows.
   6. Recirculated air should have at least a 50 per cent addition of fresh air.

II. Lighting.
   1. The best lighting is unilateral and from the left. (Lighting from two opposite sides or from the front of the room is not permissible.)
   2. The glass area of windows should not be less than one-fifth of the floor area. One-fourth is ideal.
   3. If lighted from one side, the farthest seat from the windows should not be more than two and one-fourth times the height of top of window from the floor. If lighted from side and rear, this distance should not exceed two and a half times the window height.
   4. The light on every desk should be about 9 foot candle power.
   5. Blackboards should not be placed between windows or in such a manner as

[2] Unpublished materials, Frank A. Butler, Graduate Student, Department of Education, University of Wisconsin. *Elementary School Standards for the Improvement of Teaching*, by A. S. Barr and others. Edwards Bros., Ann Arbor, Michigan.

to require pupils to face the light while working.

6. Inasmuch as the upper half of the window admits about two-thirds of the light, it should not be obstructed by curtains except to shut off direct rays of the sun.

III. Seating.

1. Seats should be single (that is, one pupil per seat).
2. Seat and desk should be separate (that is, the seat should be separated from desk or back).
3. Seats should be adjusted to individuals (or individuals adjusted to seats).
4. The seat parts should be so adjusted that the pupil's feet rest squarely on the floor and the legs from hips to knees in a horizontal position.
5. The depth of the seat (front to back) should be such that the front edge of seat does not press against the angles under the knees when the pupil is correctly seated.
6. Seat backs should be curved to fit natural body form and should support the back from just above hip bones to just below shoulder blades.
7. Desk tops should slant about 15 degrees.
8. While the pupil is seated erect on a seat of correct height, the desk top should be so adjusted that both fore-arms lie evenly upon it and in a writing position without elevation of the shoulders, outward extension of elbow, or any forward stoop.

Standards of classroom equipment may be treated in a similar fashion. The standard classroom equipment established for VII-B classes in History in the Detroit Public Schools is given below.[3]

HISTORY, VII-B

Type	Function	Distribution
A	Basic text	1 copy per pupil
1 B	Reference material	10 titles, 1 copy per room
1 B	Pictures	25 titles, 1 copy per room
1 B	Magazines	2 titles, 1 copy per room
1 B	Course of study	1 copy per room

When one turns to other aspects of the recitation, the setting up of definite standards is not an easy matter. Let us take, for example, some specific learning situation. Parker has suggested that the study of learning situations be reduced to types.[4] Let us follow his suggestion. They should serve about the same purpose in education as *species* and *genus* in biology. Parker has suggested six types of learning: (1) acquiring motor skill; (2) associating symbols and meanings; (3) acquisition of general and abstract meanings; (4) problem solving; (5) acquiring habits of enjoyment; and (6) training in expression. While these specific types are not immediately applicable to the teaching of all subjects, they have value.

Let us apply the idea to the teaching of history. While no individual history teacher could be expected to master scientific techniques for the innumerable specific teaching situations of which history teaching is composed, one might expect him to acquire in time mastery over a reasonably small number of type teaching situations. These might be of the following sorts: (1) reading for mastery; (2) reading for experience; (3) reading for leisure; (4) mastery of sequential relationships; (5) mastery of time relationships; (6) mastery of place relationships; (7) acquisition of attitudes and ideals; (8) acquisition of knowledge; (9) the appreciation of values. The mental processes involved in each of these types

[3] Barr, A. S. "Textbook Accounting." *Elementary School Journal*, Vol. 23 (Oct., 1922), pp. 127-135.

[4] Parker, Samuel C. *Methods of Teaching in High School.* Also *Types of Elementary Teaching and Learning.* Ginn and Co.

might then be minutely studied and suitable teaching procedures developed. Thus thought of, mental processes and teaching procedures lend themselves to scientific study.

There is, however, a further complicating factor. While physical settings may be rendered constant by producing a most favorable standard situation in the development of type teaching situations, the pupils will vary—in training, interest, intelligence, and physical stamina. And these differences are important. They must be taken into account in any attempt to set up type procedures. To ignore them is to render the types impracticable. This problem is, however, not insolvable. Probably some such procedure as that just suggested for dealing with learning situations might be applied to individual differences in pupils and classes. Of course, there are no types of pupils, just as there are no types of learning. But types serve a practical purpose; they supply something to which the many specific instances of teaching may be referred. They serve about the same purpose in teaching that generalized experience does in everyday life.

Now to return to our supervisor; how can supervision be made scientific? The teacher this morning has chosen to teach the meaning of a very significant term in American history, namely, *imperialism*. She has a very homogeneous group of poorly trained pupils of average intelligence. She has adopted a particular procedure. Is her procedure right? The supervisor should know from experimental studies of the teaching of the social studies the relative effectiveness of different type teaching procedures for different types of subject matter and for different types of pupils. Otherwise supervision may be merely impressionistic. It must otherwise remain largely a matter of opinion and experience. The task ahead is a difficult one but possible.

Something of the general character of such materials for the subject of history can be illustrated from Barr's *Elementary School Standards for the Improvement of Teaching*. The materials are stated in question form.

When the activity is one involving the acquisition of general meanings, does the teacher strive to develop clearly defined, vivid concepts:[5]

1. By supplying fundamental (elemental) motor experiences (*e.g.*, "stepping off" a rod, lifting sixteen ounces, inspecting a model, etc.) when such experiences are needed?
2. By recalling previous personal experiences? (*E.g.*, a tiger may be defined by selecting some qualities from known members of the cat tribe and combining them with qualities of size and weight derived from other objects.)
3. By recalling familiar examples selected to bring out common characteristics? (*E.g.*, the meaning of matter might be derived from familiar examples embodying the concept.)
4. By adding greater detail? (*E.g.*, the "Struggle for Independence" takes on meaning when details are given. Details are for background and are not to be memorized.)
5. By developmental exercises to give experiences out of which definite concepts may be derived? (*E.g.*, the word *tact* may be used in a dozen different sentences.)
6. By exact definition where exact definitions are essential? (*E.g.*, technical terms; in geometry, *line surface, square;* in economics, *wealth, capital,* etc.; in physics, *work, heat, mass,* etc. Aid the pupils to keep summarizing the meaning or rule which they are gradually building up, eventually reaching a clear, concise statement of it.)
7. By practice in the use of the term, principles, or rule? (Provide well-selected exer-

[5] This material was not prepared to apply specifically to history.

cises to give pupils practice in recognizing and using the new idea in more complex situations.)

This illustration can scarcely lay claim to being scientific. It merely shows the type of thing that needs to be done.

Once this goal of objectivity has been attained, there are others ahead. The analyses may be made even more definite and more objective. It is really not necessary to rely upon general impressions and verbose descriptions. Teaching itself is made up of specific teaching activities, spoken, written, or enacted. These activities are observable. They must be, otherwise they could not be interpreted by the pupils taught. The teaching of one teacher differs from that of another in the activities performed by them. Know these activities and you will know why one teacher succeeds and another fails. Types of teaching procedures such as those suggested above may be further analyzed into specific teacher and pupil activities. Such analyses will show that teachers differ in the specific activities performed by them, in the frequency with which various activities are performed, and with the time consumed by them.[6] It is in the performance of these activities that the real differences in teaching are found. Our supervisor may be as objective as he chooses.

The detailness of the program suggested is almost absurd. The minuteness of the analyses are almost equal to those performed by a chemist or physicist in the scientific study of the material forces about us. Just how scientific supervision may become remains to be seen.

Time and frequency studies have been suggested as a next step in objective studies in teaching. An illustration of such studies may be taken from an unpublished study of the teaching performance of good and poor teachers of the social studies in the junior and senior high school. While this study does not take into account specific types of teaching, it does consider characteristic differences in the teaching performance of teachers. The nature of such data may be illustrated from the following materials pertaining to the relative number of fact and thought questions asked by good and poor teachers in their teaching of the social studies.

TABLE I—The per cent of fact and thought questions asked by 47 good and 47 poor teachers of the social studies in the junior and senior high school.

Classification	Poor Teachers	Good Teachers
Recall of facts (memory)	53.6	49.5
Memorized judgments	27.8	25.8
Expository (meaning, illustrations, explanations)	8.2	4.8
Real judgments	10.4	19.9
Total	100.0	100.0

TABLE II—The time consumed by good and poor teachers of the social studies in typical teaching activities. (Tentative data.)

Activity	Poor Teachers	Good Teachers
Assignments	107 sec.	329 sec.
Routine activities	50 "	8 "
Wait and delay in putting questions	176 "	80 "
Average length of pupil's response	15.4 "	18.7 "
Total time consumed by pupil	48.9%	47.0%
Total time consumed by teacher	51.1%	53.0%

[6] See Barr and Burton, *The Supervision of Instruction* (D. Appleton & Co.), Chapter XV, for a description of time and frequency studies.

The data in Table I indicate the relative frequency with which the four types of questions, namely, direct recall, memorized judgments, explanations, and real judgments are drawn upon. The number of fact questions asked by both good and poor teachers is surprisingly large. The only important difference is in the number of real judgment questions asked. Similar data have been collected for many aspects of teaching. In some instances the differences are found to be marked; in other cases the differences are negligible.

Another example, taken from some time studies of teaching, illustrates further the kinds of materials that supervisors may collect. (Table II.)

If supervisors care to observe in somewhat this manner specific teacher and pupil activities, to count the frequency with which they are performed, and to calculate the time consumed by them, supervision may become relatively exact. The road ahead, however, is not an easy one. There remains to be done a tremendous amount of very careful work before supervision can at all be characterized as scientific.

AN UNCAPITALIZED OPPORTUNITY IN ELEMENTARY EDUCATION

William A. Cook
Professor of Education, University of Cincinnati

As the school systems of our larger cities developed, the tendency in supervision and administration was to retain a large degree of control at the center, and to make building principals as well as teachers ministerial rather than discretionary factors in the operation of the system. A swarm of special supervisors grew up in the attempt to deal adequately with the supervisory problem, which increased steadily with the enrichment of the curriculum. But the result was to dehumanize many of the relationships of an institution which should be just as human as its output, and to substitute inspection and administrative organization for supervision. The effect of this in turn has been a sharp reaction, a recognition of the value of centrifugal as well as centripetal forces in school organization. On every hand for the past decade the school surveys have championed the prestige and responsibility of the principal as the head of his school, and superintendents generally have reëchoed that sentiment.

The resulting load of administration, supervision, clerical routine, and extramural organization placed upon the principal has in most systems exceeded the ability of the typical incumbent, and, in justice it must be admitted, has amounted to rather more than any except the most unusual individual could efficiently carry. Conditions have been rendered more unsatisfactory by the rapid development of supervisory technique, until the amount of research in reading, spelling, and arithmetic entitles them to be called "special subjects" also. Under the increasing demands for supervision, various proposals are heard. Additional supervisors of separate subjects are still being provided, while some are frankly committed to the complete separation of administration and supervision, and their assignment to distinct groups of workers.

The principal object of the writer is to

point out a third avenue of relief, which has already received comment in professional literature. This alternative appears in the person of an assistant principal, though the title varies considerably. In Baltimore and New Orleans the title is "vice-principal," which might indicate that the prime function of the subordinate is to act as principal in the absence of the latter. In Boston two classes of subordinates are found, the "sub-master" outranking the "master's assistant." In Cambridge, Massachusetts, only the master's assistant is found. In New Haven the title is merely "assistant," but it probably does not in the majority of cases indicate one who could properly be called an assistant principal.

In a study conducted in the largest cities of the country some two years ago, Schroeder found that the assistant principal had appeared in about half the cases examined.[1] A recent survey made by the present writer and covering a smaller number of cities of widely varying size confirms the conclusion of Miss Schroeder's study as to the trend toward the creation of such a position in the largest cities,[2] but reveals little use of the office in cities of less than a hundred thousand. Nevertheless, cities of all sizes down to 15,000 to 20,000 might profit just as much from the existence of such an officer as the larger ones. The consideration in creating such a position should be the existence of elementary school units of as many as fifteen teachers, and the resolute intention to professionalize the principalship.

Teaching duty of some sort is still very general for the assistant principal, even in cities the size of Boston, Cincinnati, and New Orleans, and no doubt will continue to be part of the assignment in most schools. Such teaching is almost entirely in either the highest grade taught in the building, or the departmental unit formed in the upper grades of the building. Work in the primary grades is quite rare, except, as in Boston, where very small primary schools with only three grades are frequently in charge of a master's assistant, who in that case teaches Grade III.

The number of assistant principals is regularly less than the number of principals.[3] A school of less than ten teachers is unlikely to have an assistant principal, and even the provision of such officers for large schools is not carried out consistently on the basis of size. Now and then principals are doubtless found possessing such an attitude toward their school that an assistant principal would be either little used or somewhat misused. In such instances the only recourse of the administration in the central office is to make appointments of assistants to schools where the principal will welcome them to service.

A check of school directories for cities of almost all sizes shows the rise of women into elementary principalships to be rapid, with the prospect that they will soon be in a majority in even the larger places, as they already are in most smaller cities, outside of the South. The sex distribution of assistant principals indicates a drift toward monopoly by women.

The following table will make the situation evident with reference to a few representative cities of widely varying size.

[1] Schroeder, "Status of the Assistant Principal in the Elementary School." *Fourth Yearbook of the National Association of Elementary School Principals*, pp. 389-400. (The full study was a Master's thesis at the University of Cincinnati.)

[2] Chicago is an illustration of the large city which has replaced the assistant elementary principal by a paid clerk. This would carry some intimation of the duties formerly assigned to assistant principals there. If such was the conception of the assistant principalship, doubtless the change was wise.

[3] Boston presents the exact opposite with her numerous small buildings, and a teaching master's assistant rather than a master in charge.

	Principals		Assistant Principals	
	Men	Women	Men	Women
Baltimore ...	21	65	1	20
Boston	61	15	90 [4]	220 [5]
Cincinnati ...	47	6	22	17
New Orleans .	3	50	..	49
Cambridge ...	All	.. [6]	..	All
Des Moines ..	4	26	..	27
Wilmington ..	2	23	..	3
Binghamton .	4	11	..	11

A large majority of cities report the practice of drawing their elementary principals from within their own system. This may not be a wise policy, and certainly it should not be invariable, unless the system has a plan of training its own employees for principalships. Fisher, in a current study, found small provision for the training of elementary principals by specific courses or curricula in higher institutions of a professional character.[7] Her discovery emphasizes still more the expediency of developing training facilities within the system itself.

The turnover in elementary principalships varies widely, but data for stable systems indicate a figure of approximately five per cent. This means that the present staff of principals in large cities is a mature group, and, to speak truly, not only ungarnished by a college degree in many instances, but in a much greater measure not in touch with recent developments in elementary administration and supervision. However, a progressive policy of selecting promising material for assistant principalships and giving it a proper apprenticeship will insure much progress within the next ten to twenty years. The following suggestions, tentative in spirit, may at least have the merit of bringing to mind some primary problems of the situation.

1. Appointments to assistant principalships should be made upon the basis of the baccalaureate degree, two years of successful experience in the elementary school, and the possession of those native traits which are sought in the principal himself. While it is doubtful whether anyone less than 23 to 25 years of age should be accorded appointment, it is likewise true that an upper limit should be set, so that one might enter his "period of waiting" with the prospect of filling a long and valuable period of service as a principal ultimately. The assistant principalship ought not to be a haven for old teachers with a long and faithful record, and able finally to force the hand of the superintendent at a psychological moment in school politics. Nor should it be a refuge for married men who "need a little more salary," and are utterly without other prospects. The turnover in the ranks of the principals will be one element determining the length of the apprenticeship of the assistant principal, but it seems questionable whether appointment as assistant principal should occur after the age of thirty, and assuredly in no case after the age of thirty-five.

2. The candidate for appointment as assistant principal should as a prerequisite include in his professional training six to eight semester hours of administration and supervision pertinent to elementary education, and in excess of the requirements of the system for elementary teachers.

[4] All sub-masters are men.
[5] All master's assistants are women.
[6] In Cambridge a "master," always a man, is in charge of the larger schools. But where the staff is less than eight, a "principal" is designated, and in every case but one this is a woman.
[7] Fisher, "Inquiry into the Training of Assistant Principals." *Journal of Educational Method*, V: 429-433.

3. The length of the period of apprenticeship should be made approximately evident by calculations based on data, as fast as such accumulates. But some estimate in advance is desirable for the purpose of laying out the program of training as well as satisfying the mind of the apprentice. Let us take a sample problem. If the turnover in elementary principalships is 5% annually, and if assistant principals are half as numerous as principals, the presumption would favor an apprenticeship of ten years. But an additional element requiring allowance is the turnover in the ranks of the assistant principals themselves, due to withdrawal from school work on account of demonstrated unfitness, marriage, other voluntary change of occupation, or death. On some grounds one might expect the turnover among the younger group to be larger than among the principals, but on other grounds it might be expected to be smaller. Assuming that it turned out to be 5%, the same as for principals, a group of assistant principals might look forward to an average apprenticeship of a little less than seven years. Starting with a body of two hundred principals and one hundred assistant principals, the problem appears thus:

Let x = number of years required to consume a hundred assistants.

Then $100 - 5x$ = number of assistants surviving to that time.

But $10x$ = number of assistants to be promoted in that period.

$$100 - 5x = 10x$$
$$15x = 100$$
$$x = 6\tfrac{2}{3}$$

Fifteen new assistants would be appointed each year, ten fill vacancies caused by promotion, and five to take care of turnover.

An alteration of any one of the three elements in the problem would affect the result in a manner that can easily be determined. The writer cannot agree with Fisher that an apprenticeship of a year or two would be sufficient. Not only would it be an insufficient guarantee of the proper degree of efficiency, but it would be a theoretical rather than a practical limit, since openings would not arise that fast in the principalship.

4. The teaching experience of the apprentice should be conditioned by both the size of the building and the amount of clerical assistance furnished the school. Standard arrangements for granting clerical assistance are slowly being adopted by city systems, and the hope is that in the near future no large amount of clerical routine will have to be performed by employees receiving 50% to 200% more than a fairly qualified clerk. A proper administrative provision apparently would be a non-teaching principal with a teaching assistant in each school of over fifteen teachers, the teaching duties of the assistant decreasing until in a school of twenty-five teachers he is freed from any set assignment, except for demonstration purposes.[8]

5. The character of the teaching experience should be broad. Assignment of the apprentice might be influenced rightly by the nature of his previous teaching of two or more years, but he should come to the end of his apprenticeship with a feeling of sympathy for and understanding of the work in all grades of the kind of school he expects to head. A woman should divide her time not far from equally between primary, intermediate, and upper grades, omitting the last, of course, if the junior high school has been adopted. A man might not wish to be assigned below

[8] In Baltimore the median size of school with a principal and an apparently non-teaching vice-principal is 26 teachers. In New Orleans the median size of school with a teaching vice-principal is 16 teachers. Cambridge has brought about very favorable conditions with a non-teaching assistant in schools with a median of only 18 teachers.

the third grade, and his desire could probably be granted with safety. It is much better if the assistant comes *up* with the grades, instead of moving in the opposite direction. His last teaching should come in the upper grades, where the growing departmental arrangement will make it easier for him to get away from the classroom for considerable parts of the school day.

6. No particular custom can be detected in placing men with women, or women with men, for training as assistant principals, but it would seem expedient to keep the number of men and women as nearly equal as possible in the assistant principalship, and to give the assistant part of his training under a man, and part under a woman principal.

7. The program of the apprentice should proceed regularly under instruction from the superintendent's office. Reports from several cities with assistant principals leave the impression that little central control is exercised over this matter, and that principals dispose of assistants much as suits their individual notions. Much is to be learned, and no two minds would exactly agree on the sequence. In harmony with the teaching duty already advised, and the general plan of placing the simpler elements first, this schedule of responsibility is recommended for assistants:

1st year—Condition of school plant, and provision of material supplies.

2nd year—Records and reports for the local school and for the central office.

3rd year—Checking the testing program, and analyzing results.

4th year—Pupil organizations and playground supervision, including athletics.

5th year—Home and community contacts, individual and organized.

6th year—Disciplinary problems.

7th year and thereafter—Supervision of instruction, including also testing, curricular studies, promotional plans, and staff meetings.

8. The length of time spent by an assistant principal in one school should be limited for more than one reason. As the teaching duties become less, transfer should generally take place to a larger school for greatest efficiency of operation of the system. Supervisory apprenticeship is difficult in a school where one has taught long. Different principals have different contributions to make, and the apprentice should have under each the training which that principal is best qualified to give. It might seem that this would cause schools to become warped, with both the principal and the assistant stressing the same things. The best remedy would be to assign the strongest teachers to the smallest schools, where would be found principals with thorough administrative ability to start the apprentice on his course of training. In the larger schools with weaker teachers requiring more supervision, and headed by a principal with strong supervisory interest, the more general provision of clerical assistance and the already thorough equipment of the assistant principal in administration, should save the situation from any serious administrative tangles.

9. Before appointment to a principalship, the assistant should have completed his work for the Master's degree in school administration and supervision.

10. The salary schedule for the assistant principal should extend from a minimum slightly above that of teachers of equal preparation and experience at the time of his original entry as assistant principal, to a maximum barely short of the minimum for principals. With the plan in full operation, it might fairly be urged that the minimum for principals should be fixed higher than formerly in view of the better service to be expected. This should make it possible to offer the efficient assistant principal some annual increment during practically his entire tenure as such.

TIME ANALYSIS OF ACTIVITIES IN HIGH SCHOOL PHYSICS

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Analysis of time expenditure in the classroom may serve two purposes. First, it may serve as a guide to the teacher for self-analysis by furnishing him with a statement in as exact terms as possible of the specific pupil and teacher activities observed over a stated period while the class is engaged in the study of certain types of materials. It may supply definite data in the light of which the teacher may evaluate his own teaching. He may see whether he is omitting what might be basic activities or spending too much time on one type or too little on another. Second, it may furnish a technique whereby the relative effectiveness of definite types of classroom activities may be objectively evaluated.

The purposes of this study are:

1. To make a check list of activities found in high school physics classes and to note the relative teacher and pupil time-emphasis received by each activity.
2. To note the differences in range of activities and in relative time expenditure on various activities between a group of teachers and pupils in which the pupils during the semester showed improvement above the average of all the participating classes and a group of teachers and pupils in which the pupils during the semester showed improvement below the average of all the participating classes.

The data for the study were procured from 57 high school teachers of physics who were teaching in large representative high schools. These teachers coöperated in this study in the following ways:

1. They administered to the class which they selected for the study, the Otis Self-Administering Mental Ability Test, Form A. The tests were returned to me and scored by a single individual.
2. They administered at the beginning of the semester as initial tests of knowledge of pupils in physics, the Hughes Physics Scales, Advanced forms, Information S. and Thought S.
3. They had a student keep with a watch, on a checking list furnished for the purpose, a record of the expenditure of class time as the time was distributed among the various activities of the class. This record was kept by 39 teachers in all the recitations over a period of one week, when the class was beginning a study of current electricity. It was again kept by 30 teachers for the recitations over a week period when the class was beginning a study of sound. Six teachers again kept the record for the recitations over a week period when the class was beginning a study of light. All in all there is a record of time expenditure in various activities for 75 weeks of recitations. The total number of actual recitations, omitting laboratory, is 219.
4. They again administered at the close of the semester the two physics scales which had been administered at the beginning.

THE LIST OF ACTIVITIES

The following outline shows the list of activities which were included in the final sheet used by the pupil for recording time expenditure. A fairly rigid definition for each activity and directions for keeping the time were furnished with each instrument. The following outline merely lists the items. No attempt is made to reproduce the instrument. The time expenditure was

Activity	Percentage of total time expenditure in teacher activity given to each activity	Percentage of total time expended in pupil activity given to each activity
I. Developmental activities.		
A. Oral discourse.		
1. Asking questions	18.4	10.4
2. Answering questions	10.1	29.6
3. Reporting on topics	3.8	2.4
4. Miscellaneous	.9	.5
B. Demonstration.		
1. With physical apparatus	19.9	7.8
2. With blackboard drawings	14.7	5.1
3. With slides, models, charts, etc.	1.0	.7
4. Miscellaneous	.2	
C. Problem solving.		
1. Isolated problems	1.0	4.1
2. Developing formulæ	1.4	.8
3. Discussing and solving previously assigned	2.9	9.7
4. Miscellaneous	.1	.2
II. Drill activities.		
1. On practice exercises	1.0	1.6
2. Blackboard drill		4.5
3. Oral drill on drill questions	1.1	3.4
4. Miscellaneous	.2	.3
III. Testing activities.		
1. Informal essay	.3	4.3
2. Objective (true, false, etc.)	.6	7.3
3. Standard (achievement)		1.2
4. Miscellaneous		.4
IV. Routine activities.		
1. Taking roll	3.8	.3
2. Collecting and returning papers	1.5	.9
3. Taking and returning apparatus	2.8	1.8
4. Miscellaneous	.5	.5
V. Dealing with results.		
1. Discussing grades	1.5	1.1
2. Graphing results on tests	.6	
3. Miscellaneous	.7	.1
VI. Assignment activities.	10.6	1.0
VII. Study activities (omitted from above computations)	—	—

divided between time consumed by the teacher and time in which one or several of the pupils were reacting.

The percentage which the time spent on each activity by the teachers is of the total teacher time expenditure in all the activities is placed in the first column. Similar data on pupil activity is given in the second column.

The total time expenditure for the 219

recitations on all the activities listed above was 10,950 minutes. The number of minutes of pupil activity was 5010. The number of minutes of teacher activity was 5940.

The division of time between pupils and teacher was in a ratio of about 46 to 54. Pupil activity, of course, is not an exact term. It was taken in the study to mean the time consumed when the recitation was being carried on by one or all of the pupils. It is obvious that there might be more real pupil activity while the teacher is talking than while the time is being consumed by a pupil who is talking.

A physics teacher may use the list above in two ways. First, he may check his own activities against it. Second, he can set up time standards as a guide over a designated period. To illustrate, let us take the matter of demonstration. Suppose a teacher has a class period of 45 minutes. The average amount of this time utilized by the teachers in this study would average 24 minutes, 35.8% of which was given to demonstration work. In other words, for ten recitations the average time given by the teachers in representative schools was as much as 86 minutes to this type of activity while, of course, dealing with materials such as have been mentioned. In this way the teacher may figure out for himself the standards set for time expended on any activity by the 57 teachers coöperating. If he does not wish to follow these standards, it is at least of some value to be conscious of the range of activities that he might employ and of the relative emphasis teachers are accustomed to place upon each of them.

COMPARISON OF TIME EXPENDITURE OF TWO GROUPS

In the following comparison the classes are divided into two groups. Those classes in which the pupils ranked in improvement during the semester in the upper half of the classes studied are placed together in Group I. Those that ranked in the lower half in improvement are placed in Group II. Improvement on both the information and thought scales was computed by merely subtracting the sum of the scores made on the scales at the beginning of the semester from the sum of the scores made on the same scales at the end of the semester. The scores on intelligence were not used in classifying the schools into the two groups. The correlation between the mean intelligence scores of the classes as shown by the difference in scores on the physics scales at the beginning and end of the semester was so small as to make it appear that the amount of improvement on the physics scales bore little relation to intelligence. The correlation between mean scores of classes in intelligence and the mean improvement of the same classes was .0001 for the thought scales and .25 for the information scales. A low correlation between the factors of intelligence and of improvement is probably what one should expect. Since correlation between improvement and intelligence was so low, the factor of intelligence was dispensed with in classifying the schools. Improvement was the only criterion. The amount of improvement as here measured was found by averaging the improvement in points made by each class on both scales. Thus the improvement represents the average improvement on both the Thought and Information Scales. The range of improvement obtained in this way was from 9.6 points to 16.2 points in Group I and from 4.9 points to 9.6 points in Group II. The mean improvement of Group I was 11.8 scale points and for Group II, 7.7 scale points.

The next step is to note what, if any, differences existed in the time distribution upon classroom activities by the two groups. Considering the difficulty of the

Activity	Percentage of total time expended in teacher activity spent on each activity		Percentage of pupil time expended in pupil activity spent on each activity	
	High Group I	Low Group II	High Group I	Low Group II
I. Developmental activities.				
A. Oral discourse.				
1. Asking questions	17.3	19.1	9.1	10.4
2. Answering questions	10.5	10.4	25.0	32.7
3. Reporting on topics	3.4	4.3	1.4	3.0
4. Miscellaneous	1.7	.2	.9	.3
B. Demonstration.				
1. With physical apparatus	22.3	17.4	9.3	6.8
2. With blackboard drawings	13.0	17.8	4.4	6.8
3. With slides, models, charts, etc.	1.3	.9	1.4	
4. Miscellaneous		.4		
C. Problem solving.				
1. Isolated problems	1.3	.9	2.4	5.5
2. Developing formulæ	1.3	.9	.6	.6
3. Discussing problems previously assigned	3.0	2.6	6.9	11.6
4. Miscellaneous		.2	.2	.3
II. Drill activities.				
1. On practice exercises	.3	2.2	1.4	2.1
2. Blackboard drill			7.9	1.4
3. Oral drill on drill questions	1.8	.5	5.3	1.0
4. Miscellaneous		.5		.7
III. Testing activities.				
1. Informal essay	.5	.2	7.6	1.6
2. Objective (true, false, etc.)		1.1	7.6	5.8
3. Standard (achievement)		.2	2.4	
4. Miscellaneous			.9	
IV. Routine activities.				
1. Taking roll	4.5	2.7	.4	.2
2. Collecting and returning papers	1.2	1.1	1.5	.3
3. Taking out and returning apparatus	1.2	3.4	2.6	2.3
4. Miscellaneous	.3	.3	.2	1.0
V. Dealing with results.				
1. Discussing grades	1.4	2.1		2.7
2. Graphing results on tests	.3	1.1		
3. Miscellaneous	1.4			
VI. Assignment activities	11.9	9.3	.4	2.5
VII. Study activities (omitted from computations)	—	—	—	—

scales, there is considerable difference between the amount of improvement in the achievement of the two groups. This may be reflected in the nature and range of activities in which the classes engage. Possibly those classes where improvement was low were omitting important activities which were being stressed in those classes where improvement was high.

COMPARISON OF ACTIVITIES

There are 34 classes in Group I, the superior group in improvement, and 33 classes in Group II, the inferior group in improvement. Since number and length of periods were not quite the same for the two groups, the comparison between relative emphasis on the various activities as measured in terms of time expenditure is given on a percentage basis. The following table shows the percentage of time distribution spent upon the various activities by the teachers and pupils which constitute each group.

For purposes of comparison teachers and pupils are kept separate. In reading the table one may keep in mind that there was a total time expenditure in Group I of 5816 minutes, which was divided between pupil and teacher activity in the ratio of 47 to 53. In Group II, the total time expenditure was 5134 minutes, which was divided between pupil and teacher activity in the ratio of 45 to 55. The percentages for the teacher represent the percentage of the total teacher time-activity and percentages for the pupils represent the percentage of the total pupil time expenditure.

The above table is furnished for those who may desire to make a detailed analysis. For purposes of gross analysis the table is condensed into major groupings.

Apparently, there is little difference between the emphasis given to the various activities by the teachers of either group. There is, however, some difference in the time distribution devoted to the various activities by the pupils. The pupils in Group II, which is the group with the least amount of improvement, devoted a greater percentage of time to oral discourse, to solving and discussing previously assigned problems, to discussing results, and to discussing assignment. In other words, when

Activity	Percentage of teacher time expended in teacher activity devoted to each activity		Percentage of pupil time expended in pupil activity devoted to each activity	
	Group I	Group II	Group I	Group II
Oral discourse	32.9	34.0	36.4	46.4
Demonstration	36.6	36.5	15.1	13.6
Problem solving	5.6	4.6	9.8	18.0
Drill	2.1	3.2	14.6	5.2
Testing	.5	1.5	18.5	7.4
Routine	7.2	7.4	4.3	3.8
Results	3.1	3.2		2.7
Assignment	11.9	9.3	.4	2.5

it comes to time spent in discussion, the pupils of Group II used more time in this way than did the pupils of Group I. The excess in time expenditure in this respect is considerable for, while oral discourse, discussing and solving previously assigned problems, discussing results of tests, and discussing the assignment, took up practically 70% of the pupil time activity in Group II, it claimed but 47% of pupil time activity in Group I. On the other hand, whereas 33% of the pupil time activity in Group I was spent in drill and testing activities, only 13% of the pupil time activity of Group II was spent on these activities.

While any explanation of these results must be akin to speculation, one may be privileged to question whether class discussion as ordinarily conceived does provoke a sufficient amount of individual activity—say close enough to 100% on the part of all pupils—to justify having oral discussion take up the major part of the pupil's time. It is quite possible that Group I excelled in improvement over the semester because there was a more reasonable emphasis placed upon all the activities. The frequency of recurrence of drill and testing activities was much greater on the reports of the classes in Group I than was true of the reports of the classes in Group II. In fact a considerable proportion of the teachers in Group II had neglected these activities entirely.

Teachers may well afford to analyze the distribution of their activities frequently. It will help them to vary the work, to introduce new activities and more activities during a single recitation, to avoid underemphasis on one type of activity and overemphasis on another; and what is better, self-analysis will cause growth which is, after all, the essence of good teaching and an essential factor in the promotion of growth in others.

A PROJECT IN TEACHER TRAINING

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Of recent years a great deal of attention has been given to the training of teachers for service and the training of teachers in service. The former has been left to institutions more or less especially prepared for such work, while the latter has been left almost exclusively to the individual teacher or to the administrative officials of the school systems in which she renders service.

School superintendents have long been cognizant of the fact that the teacher's service to her school is increased only as her professional growth increases, and have undertaken various projects for teacher improvement from year to year. General teachers' meetings, professional reading, extension and summer courses, supervisors' visits and conferences, demonstration lessons, visiting days, sectional meetings for subject-matter and methods discussions, school exhibits, state conferences, and the like have all entered into the general scheme of things to make better teachers. Perhaps they always will enter into the general scheme of things to make better teachers, and from what past experience has shown we judge they should,

but to what extent they are used by any one superintendent in any one year is quite another question.

A high school principal—supervising principal—once voiced this policy: that where he had a teacher who was getting results, doing the job, he left her alone. And while this is an assertion from only one supervisor, we are still wondering if it is a penalty strong teachers must pay for being strong. Frankly, are we, supervisors, not too much inclined to confuse values and is it not true that the strong teacher most welcomes supervision and is the one most worth a supervisor's time and efforts? Why not give her an opportunity to make a little more preparation and distribute her secrets? She is usually most unselfish with her contributions when given an opportunity to spread her gospel, and is the type from which supervisors should be chosen. Ought we not invent a highly sympathetic vocabulary by which we might be able to express adequate pity for supervisors who must spend all of their time following up "weak sisters" and "weak brothers"? On the other hand, glory be to the one who helps the weak become strong and also makes ample self-preparation to lead the leaders! We fear, however, that the assertion is indicative of the suspicion that the teacher-classroom situation is the one most easily neglected. Whether it is the most disagreeable work, whether there is the danger of clash in personalities, whether it requires more tact and greater specialization, whether it is more distasteful to call black *black,* knowingly, than black *white,* unknowingly, or what not, we have a suspicion that this situation, the most vital of all school problems, is the most easily neglected and the most likely to be neglected.

We must all admit that the superintendent of schools without an adequate supervisory staff has a multiplicity of duties and is quite a busy man. We must admit, too, that values in school problems shift with time—that one part of his work may need especial emphasis at one time, another at another time, and so on; that one set of conditions may produce desired growth with some teachers and prove useless with others; that the maximum in salary schedule or a state life certificate (with maximum reading circle credits) may for a time dampen the ardor of some teachers; or the school system may not always provide opportunity for advancement for that class of teachers who could and would go on of their own accord if ample opportunity existed. But let us be mindful also of this—the responsibility for the classroom product does not shift; that this responsibility rests with those in charge of the school system; that it can be met only through a live, wide-awake, active, growing, progressive teaching force. "I want my boys to drink from a living spring and not from a stagnant pool" should be the keynote of every progressive school system, and this keynote is sounded always and only by the growth in the teaching force.

A well-known superintendent of schools recently remarked that about the only way to get growth on the part of some teachers is to let them know that something vital hangs in the balance. We feel that we can agree with him. We feel, too, that he would agree with us that the number of teachers to whom an appeal of this order is necessary would constitute only a small fractional part of that great body of teachers who look upon teaching as service. Be that as it may, that urge forward must be supplied. Come as it will through coercion to meet present conditions, through larger opportunity with the possibility of greater reward, or through the pointing out of a needed service worth rendering, the urge forward is imperative and should be ever-present.

It has been the writer's good fortune to be working in a school system during the past three years in which the various courses of study have been in process of revision. It is the purpose of the remainder of this manuscript to present a skeleton outline of how the work was accomplished. Canton, Ohio, has a population of one hundred five thousand with four hundred seventy elementary teachers and more than fifteen thousand elementary pupils.

General Plan of Work

First Step.—Director of the project consulted the superintendent of schools regarding the general plan of procedure, and the appointment of teacher committees for participation.

Second Step.—Appointed chairman, and teachers from each grade, for each of the elementary school subjects, special research, typing, final checking, and binding. In all, about two hundred direct participants.

Third Step.—General meeting of all committees with director of the work for the general plan of procedure.

Fourth Step.—Meeting of each separate committee to set up specific aims for subject and suggest reference material.

Fifth Step.—Meeting of each separate committee to set up pupil accomplishment criteria for each grade.

Sixth Step.—Selection of subject-matter by committees for each subject—preparation of trial sheets for the entire teaching staff.

Seventh Step.—Teachers' meetings by grades to discuss, eliminate, and make additions to trial sheets.

Eighth Step.—Demonstration lessons, reports on various educational studies, and methods by grades.

Ninth Step.—Final reports of each committee to chairman and then to director of work, and arrangement into final form.

Tenth Step.—Final checking, superintendent's approval, printing (mimeograph) and binding.

The time required to complete the project was two and one half years up to its present tentative form. The assistant superintendent of schools directed the work. The superintendent of schools initiated, guided, counseled, and passed final judgment. All elementary teachers had the opportunity to contribute. They suggested and tried and judged, and in some cases almost literally submitted the outlines that they are now being called on to teach. They accept them with a better understanding of what they contain; with a seemingly firm resolve to give them a good trial; with less timidity to suggest revisions; with a more uniform understanding of mutual problems; with more analytic minds to discern strength and weakness; with a fuller appreciation of coöperation; with a greater tendency to use a textbook as a source book; with a bigger, better, clearer understanding of their own work and their relations with others with whom they work; and the satisfaction of having participated in a service worthy of their best efforts. We do not claim the best courses of study in the United States nor in Ohio, but we do claim to have had a good teacher-training project.

AN EXPERIMENT IN THE USE OF VISUAL METHODS OF INSTRUCTION

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The following experiment was tried in the Wendell Phillips School, Boston, as a practical means of testing the value of visual instruction.

OBJECT OF EXPERIMENT: To prove whether or not visual instruction in geography is worth while in grade eight of the Wendell Phillips School, and to improve the teaching of geography in the light of the conclusions reached.

MATERIALS.

Pupils: Three eighth-grade classes of boys in the Wendell Phillips School of

(1) Parallel ages.

(2) Equal rating in so far as the judgment of teachers supplemented by the results of intelligence tests[1] could make them, according to the following standards:

Inferior, below 75
Below average, 75-90
Average, 90-110
Above average, 110-125
Superior, above 125

The classes measured as follows:

	Class 1	Class 2	Class 3
Inferior	0	1	4
Below average	5	3	3
Average	14	13	13
Above average	7	6	8
Superior	2	2	1

(3) Identical training. All three classes had received identical training in seventh grade geography and parallel previous training in geography of the fourth, fifth, and sixth grades.

(4) Largely Jewish parentage with equivalent social environment and background.

Teacher: The same for each class, the writer.

Subject matter: Geography of the Pacific states; textbook, Atwood, *New Geography*, Book Two.

Visual aids: Selected clipped pictures brought by pupils and teacher, textbook pictures, post cards, and photographs brought by teacher, stereographs and slides from the school collections (fourteen slides from the "Keystone 600" set), and exhibits of Pacific states products, brought largely by the pupils.

EXPERIMENT.

Class I taught by the fact method without the use of any visual aids outside the textbook.

Class 2 taught by the fact method supplemented by clipped pictures, photographs, post cards, and exhibits.

Class 3 taught in the same way as Class 2 with the addition of stereographs and slides.

Time given to the instruction in each class was the same—five periods of forty minutes each.

Points of emphasis were the same in all three classes.

[1] Terman Group Test of Mental Ability, Form B, given by the writer and others. Results returned by Department of Educational Investigation and Measurement, Boston.

FACT TEST

At the close of the instruction, the following short test was given each class to ascertain the degree of fact mastery obtained.

1. The rainfall on the western slopes of the mountains in Oregon and Washington is light, heavy?
2. The changes in temperature from summer to winter along the Pacific coast of the United States are little, great?
3. Large crops are raised with the help of irrigation in northern, southern, California?
4. What great river is noted for salmon fishing?
5. There are few, many, good harbors on the Pacific coast of the United States?

(Directions were given to underline the correct answer in questions 1, 2, 3, and 5.)

APPLICATION TEST

One week later each class was given a short test covering the application of the same facts of the former test:

1. Why is there heavy forest growth on the western slopes of the mountains in Oregon and Washington?
2. What effect has the climate along the coast of California upon the density of population there?

CLASS 1 (FACT METHOD)

Name	I. R.[a]	Per cent Scored in Fact Test	Per cent Scored in Application Test
Dorfman	110	100	60
Finer	90	60	40
Bloom	103	60	60
Rubin	95	60	80
Schnepper	78	60	60
Zeidman	83	80	20
Atlas	80	80	40
Denutte	111	100	80
Mascari	103	100	60
Sheff	100	40	80
Intriligator	118	100	100
Adelson	107	100	80
Lipkin	121	80	100
Futransky	108	80	100
Green	118	100	100
Nelson	115	80	60
Lanciano	113	60	60
Lurie	77	60	60
Linsky	93	80	60
Segal	86	100	60
Spiel	93	80	80
Glass	107	100	100
Bryan	97	80	60
Berger	108	100	80
Holinstock	133	100	80
Levy	108	100	80
Portman	129	100	80
Rosen	100	100	60

[a] Intelligence ratios returned by Department of Educational Investigation and Measurement, Boston.

CLASS 2 (FACT METHOD PLUS PICTURES)

Name	I. R.	Per cent Scored in Fact Test	Per cent Scored in Application Test
Klamen	Absent	80	100
Berkman	98	100	80
Swartz	113	100	80
Berenson	95	100	40
Titlebaum	63	100	80
Berger	105	100	80
Silver	105	100	80
Surman	95	80	60
Kramer	79	100	80
Schneider	137	100	100
Freedman	91	100	60
Gomberg	115	100	60
Temple	85	80	40
Cabit	116	100	80
Silverman	133	100	100
Wise	98	100	80
Lexemberg	92	80	40
Segal	105	80	80
Moscovitz	74	100	40
Blyer	110	100	80
Adelson	100	80	60
Richter	93	100	60
Kaufman	107	100	80
Myerson	115	100	60
Mazer	108	80	100
Nedbor	117	100	80

3. Explain how southern California is able to raise such large crops.
4. Explain the presence of canning factories in Oregon and Washington near the Columbia River.
5. Why are the cities located on Puget Sound destined to become more and more important?

Both tests were given without previous notice to the classes, so that there was no opportunity for further study, and no mention was made of the Pacific states between the fact test and the application test. All tests were corrected by the writer and no part credit for any question allowed. Marking was purely objective with the subjective element left out.

The results obtained by the three classes are shown in the tables.

Class 2 scored higher than Class 1 in both fact and application tests. Class 3 scored higher than either Class 1 or Class 2 in both fact and application tests, although the medians of classes 2 and 3 are the same, due to the great interval between the steps.

INFERENCES

1. The lower scores in the application tests are due to the forgetting of facts on account of the time interval.
2. When facts are learned better they are more easily carried in memory and more effectively applied.
3. The use of stereographs and slides in addition to clipped pictures, photographs, post cards, and exhibits greatly increases the effectiveness of instruction.

CLASS 3 (FACT METHOD PLUS PICTURES, WITH THE ADDITION OF STEREOGRAPHS AND SLIDES AS VISUAL AIDS)

Name	I. R.	Per cent Scored in Fact Test	Per cent Scored in Application Test
Steinman, S.	102	100	100
Tanzer	96	100	80
Ostrov	100	100	100
Meister	67	100	60
Rodgers	111	100	100
London	104	80	80
Goldberg	Absent	100	100
Primack	123	100	80
Portnova	95	100	100
Sobelman	70	100	100
Whitcross	122	80	80
Finkelstein	60	100	60
Rodensky	107	100	80
Rosenthal	113	100	80
Spector, M.	102	100	60
Cohen	102	100	80
Goren	110	100	100
Trainor	102	100	100
Hersh	112	100	100
Lubin	124	100	100
Lucarelli	78	80	80
Stein	86	100	100
Smilig	138	100	80
Elitter	67	100	40
Steinman, E.	97	100	80
Blaustein	93	80	80
Kaplan	103	100	100
Litinsky	103	100	80
Chalfin	88	100	80
Spector, S.	110	100	80

SUMMARY OF RESULTS

	FACT TEST			APPLICATION TEST (one week later)			
% Score	Class 1	Class 2	Class 3	% Score	Class 1	Class 2	Class 3
100	13	19	26	100	5	4	12
80	8	7	4	80	9	12	14
60	6	0	0	60	11	6	3
40	1	0	0	40	2	4	1
20	0	0	0	20	1	0	0
Median score	80	100	100	Median score	70	80	80
Average per cent score.	84.3	94.6	97.3	Average per cent score.	70.7	72.3	84.6

CONCLUSION

In the eighth grade of Wendell Phillips School, Boston, visual instruction in teaching the geography of the Pacific states is worth while in that it not only tends to fix the facts firmly in mind but also increases the understanding of them so that they may be applied more readily.

The foregoing experiment only scratches the surface of testing in the visual field and merely indicates a possible way of going about scientific evaluation. The use of smaller percentages which would be possible by increasing the number of questions would no doubt lead to finer discriminations and the median could be more closely placed with the smaller steps. More tests and a wider use of the tests would enable us to draw more general conclusions. However, the evidence in this experiment is so strong that the writer is firmly convinced that the visual method of instruction has great value and deserves greater emphasis in modern education.

ANNUAL SURVEY OF TEXTBOOKS AND RELATED PUBLICATIONS IN MATHEMATICS

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The number of school publications in mathematics that have appeared during the past year is sizable, indeed. These publications are the outcome of differences of opinion concerning the aims of instruction in mathematics, and the psychology underlying instruction in mathematics—not of changes in the facts and principles of mathematics. For convenience, our discussion of these publications will be divided into six parts.

I. Textbooks in arithmetic.
II. Textbooks for the junior high school.
III. Textbooks for the senior high school.
IV. Practice materials and tests.
V. Professional literature.
VI. Scientific studies and investigations.

I. TEXTBOOKS IN ARITHMETIC

We have in our hands the following series of textbooks in arithmetic which have been published during the last year.

1. *Standard Service Arithmetics.* By F. B. Knight, J. W. Studebaker, and G. M. Ruch. Chicago: Scott, Foresman and Company.
2. *The Buckingham-Osburn Searchlight Arithmetics.* By B. R. Buckingham and W. J. Osburn. New York: Ginn and Company.
3. *Social Arithmetic.* By F. M. McMurry and C. B. Benson. New York: Macmillan Company.
4. *Milne-Wiley Arithmetics.* By W. J. Milne and G. M. Wiley (Revision). New York: American Book Company.
5. *The Iroquois Arithmetics.* By H. D. DeGroat, S. G. Firman, and W. A. Smith. Syracuse, N. Y.: Iroquois Publishing Company.
6. *Modern School Arithmetics.* By J. R. Clark, A. S. Otis, and M. C. Hatton. (Experimental Edition.) Published by the authors.

In giving an evaluation of these books, it seems best to list first of all certain guiding principles which experience and research have associated with effective in-

struction in arithmetic. These principles are followed by a chart, showing the writer's judgment of the degree to which each of the above mentioned textbooks incorporates these principles.

CARDINAL PRINCIPLES OF INSTRUCTION IN ARITHMETIC

Principle I. Use children's experiences, either actual first-hand experiences or descriptions of their experiences, to give purpose and meaning to arithmetical learning. It is often inconvenient, not to say impossible, however, to bring these life problems directly into the classroom. For example, let us suppose that John Smith has decided to go into the taxi business. In so doing, he will be confronted with many genuine problems, the solutions of which are of great moment to him. Obviously the teacher cannot provide such an experience for the children first hand. The best she can do as a substitute is to describe John's experiences in the taxi business, bringing out the problems that he would meet. Similarly for the numerous other kinds of problem experiences which cannot be brought into the classroom, it is necessary to substitute problems formulated or stated in words.

Unfortunately, the major part of the problem material in textbooks in mathematics must necessarily consist of these formulated problems. This being the case, our chief concern is to choose problems so that they will most nearly represent the true problems of life, in order to give the greatest assurance that the pupil's practice in solving them will function later, when the same problems or similar ones are met. In making the actual choice of problems, we must take into account their relative importance in life and the degree to which they are likely to interest children of the ages we are teaching.

It has been found that when pupils feel the same way toward the problems that they are solving in school that John does toward his in the taxi business, for example, they learn more easily and with better understanding. Hence it is highly desirable that school problems be as real and important to the pupils as John's are to him. Our second important concern, therefore, is that the situations or projects giving rise to these problems shall be described in such a way that the pupil is most likely to think of himself as experiencing them. Thus, if possible, we wish each pupil in the class to imagine that he himself is going into the taxi business, borrowing money to start a store, planting an acre of corn, or the like, in order that he will be able to learn the facts and procedures involved more easily and understandingly.

Principle II. Teach only those meanings, facts, skills, and procedures that are useful in modern life. The older courses in arithmetic, and even many current courses, require pupils to learn facts and procedures that have little or no intrinsic worth to the vast majority of pupils (or adults). Consider, for example, such indefensible procedures as adding $\frac{7}{24}$, $\frac{19}{48}$, and $\frac{37}{64}$.

Principle III. Interest pupils in their growth in arithmetical learning. We would have little or no interest in a golf game or in a tennis game if we kept no score. And how interested we become in the game when the scores indicate an improvement in skill! Pupils react similarly to school work. The keeping of a record of progress or growth in arithmetic develops a keener interest in learning arithmetic. The satisfaction that comes from having reached a set goal arouses interest and confidence in attacking the next task.

Principle IV. Distribute the practice upon learning a skill or a group of skills. Investigations in the psychology of learn-

ing arithmetic show the desirability of *distributing* the total time that is devoted to learning a given skill, such as addition, over a number of practice periods. These periods should decrease in length, with increased intervals between periods, thus providing for relearning and retention. Textbook writers should give the closest attention to this phase of the organization of teaching materials. The difficulties involved in properly distributing practice are such that teachers can seldom improvise effective drill material. Little improvement in accuracy is possible unless the basic facts in the four operations are thoroughly habituated.

Principle V. Diagnosis and remedial practice are essential to effective learning. It is obvious that pupils should become aware of their difficulties and errors. Otherwise they practice, and strengthen, errors. Only recently, however, have textbook writers and teachers been concerned with the design of systematic, self-checking diagnostic procedures, accompanied by their co-relative remedial measures.

Principle VI. Demand accuracy in computation. Half mastery or seventy-five per cent mastery in computation is the curse of present day teaching of arithmetic. It is better not to perform a computation than to do it incorrectly. Every computation must be checked. Of what avail are the computations required in the construction of a bridge if the two halves do not meet when completed?

Principle VII. Adjust the requirements of the course in arithmetic to the abilities of the pupils. "Who so taking thought of his stature can increase it one cubit?" Equally futile is it to expect a pupil of limited native endowment to do as difficult tasks as the pupil with the more favored endowment. The goals of achievement should be set so that practically all pupils may, with industry, enjoy the satisfaction of successful achievement.

In the chart which follows, the symbols *A*, *B*, and *C* signify the writer's judgment of the degree to which the books embody the preceding principles.

Text	Principles						
	I	II	III	IV	V	VI	VII
Standard Service ..	B	A	A	A	B	A	A
Searchlight	B	A	C	B	C	B	C
Social	A	A	C	C	C	C	C
Milne-Wiley	C	C	C	C	C	C	C
Iroquois	B	B	C	B	C	C	C
Modern School (Experimental Edition)[1]	—	—	—	—	—	—	—

The *Standard Service Arithmetics* comprise four parts, one each for grades three to six inclusive. The *Searchlight Arithmetics* include an Introductory Book covering pre-third grade work; Books I and II for grades three and four, respectively; Book III for grades five and six; and Book IV for grades seven and eight. In the *Social Arithmetics*, the *Milne-Wiley Arithmetics* and the *Iroquois*, all of which are three-book series, Book I is written for grades three and four, Book II for grades five and six, and Book III for grades seven and eight. The *Modern School Arithmetics* (when completed) are to be a four-book series; an Introductory Book for Teachers, for pre-third grade work; Book I for grades three and four; Book II for grades five and six, and Book III for grades seven and eight.

We are struck with certain contrasts in these texts. Consider, for example, the

[1] Since the writer is one of the authors of this series, it is not rated here.

amount of material that should be provided for a particular grade, say the fifth. For a fifth grade pupil using the Milne-Wiley text, the year's work consists of approximately one hundred fifty pages; if, however, he uses the *Standard Service Arithmetic,* his year's work consists of approximately five hundred fifty pages, or nearly four times as much. Can these two instruments of instruction be equally effective? If not, which is better? The Milne-Wiley book is compact—full of examples and problems, with very little explanatory material. The *Standard Service* text has little more actual practice and problem material, but it abounds in explanatory and illustrative materials. We are here confronted with an important question: should the textbook be self-sufficient—that is, contain all the explanatory, illustrative, and practice materials that are essential to effective learning of arithmetic? To make the textbook self-sufficient is to make it large—to increase the amount of reading to be done by the pupil. Can the pupil learn arithmetic when the book is his guide through a development as effectively as when the teacher is his guide? The writer believes that the authors of the *Standard Service* and *Searchlight* arithmetics will have difficulty in justifying the extreme emphasis which they place upon learning arithmetic by reading textbook explanations.

II. JUNIOR HIGH SCHOOL TEXTS

The three series of textbooks in junior high school mathematics before us are:

1. *Junior High School Mathematics* (Books I, II and III). By H. C. Barber. Boston: Houghton Mifflin Company.
2. *The New Mathematics* (First Course and Second Course). By E. I. Edgerton and P. A. Carpenter. New York: Allyn and Bacon.
3. *Essentials of Junior High School Mathematics,* Books One, Two and Three. By S. Hamilton, R. P. Bliss, and L. Kupfer. New York: American Book Company.

These texts follow the recommendations of the National Committee on Mathematical Requirements in that they include arithmetic, intuitive geometry, numerical trigonometry, and algebra. These subjects are frequently woven together into what is commonly known as "general mathematics." Of these three sets of texts, the Barber series appears to have achieved the correlation of the various branches of mathematics to the fullest degree. It also excels the others in the emphasis it places upon the "common-senseness" of mathematics. Both the Barber and Hamilton-Bliss-Kupfer series provide in their third books an introduction to demonstrative geometry.

The Edgerton-Carpenter series will appeal to teachers who wish to hold on to the older type of mathematical vocabulary, which emphasized such terms as *base, rate, percentage,* and the like.

III. SENIOR HIGH SCHOOL TEXTS

A Laboratory Plane Geometry. By W. A. Austin. Chicago: Scott, Foresman and Company.

Modern Plane Geometry. By J. R. Clark and A. S. Otis. Yonkers, N. Y.: World Book Company.

From the paucity of new publications for the senior high school, we may conclude that differences of opinion regarding curriculum problems there are less marked than in the elementary or junior high school. The two books mentioned above, however, evidence some controversial thought in demonstrative geometry. The *Laboratory Plane Geometry* advocates subordinating the logical exercises to the constructional work. *Modern Plane Geometry* is unique in its emphasis upon the analytic type of thinking, which is essential to making pupils discoverers rather than

reproducers of textbook proofs. Another feature of the latter is the provision for the individual differences of students of geometry, through the use of suggestions for Starred Exercises and Instructional Tests, with *x*, *y* and *z* standards.

IV. PRACTICE MATERIALS AND TESTS

Closely associated with the textbook as an instrument of instruction in mathematics is the printed drill book or practice pad. The publications in this field during the past year include the following:

1. *Work Books in Arithmetic.* By G. M. Ruch, F. B. Knight, and J. W. Studebaker. Chicago: Scott, Foresman and Company. (A book each for grades three to eight, inclusive.)
2. *Lennes Test and Practice Sheets in Arithmetic.* By N. J. Lennes. Chicago: Laidlaw Brothers. (A book each for grades two to eight, inclusive.)
3. *The Clapp Drill Book in Arithmetic.* By F. L. Clapp. New York: Silver, Burdett and Company. (A book each for grades two to eight, inclusive.)
4. *Arithmetic Practice.* By F. M. McMurry, C. B. Benson, and A. R. Jensen. New York: Macmillan Company. (A book each for grades three to six, inclusive.)
5. *Instructional Tests in Arithmetic.* By R. Schorling, J. R. Clark, and M. Potter. Ann Arbor, Mich.: George Wahr, Publisher. (A book each for grades five to eight, inclusive.)
6. *Instructional Tests in Algebra.* By R. Schorling, J. R. Clark, and S. A. Lindell. Yonkers, N. Y.: World Book Company. (For the first course in algebra.)
7. *Exercises and Tests in Algebra.* By D. E. Smith, W. D. Reeve, and C. F. Morse. New York: Ginn and Company.
8. *Survey Test in Plane Geometry.* By J. R. Clark and Vera Sanford. Published by the authors.

The primary purpose of these practice materials is to increase or maintain skills that have been developed earlier. They are more or less diagnostic, thus revealing to the pupil his particular difficulties. They provide, with varying degrees of completeness, selected remedial practice, directly keyed to the diagnostic tests. They are timed, and provide for measures of progress. We are particularly impressed by the Lennes and the Ruch-Knight-Studebaker materials. Both of these make provision for the mechanical and reasoning aspects of arithmetic. The form of the Ruch-Knight-Studebaker books is, in the writer's opinion, superior to the form of the other books. The Clapp Drill Books, although they provide practice in the two aspects of arithmetic, seem to do so in a rather artificial manner, by relegating the reasoning problems to the last section of each book. The Clapp books are the only ones to provide a single score for both speed and accuracy.

Both of the exercise books mentioned in algebra include a series of timed tests which cover all the mechanics of a first year algebra course. In addition, the Schorling-Clark-Lindell tests provide for the recording of results and the comparison of those results with *x*, *y* and *z* standards.

The above-mentioned exercise books are, in reality, tests which are used as practice exercises in algebra. The Clark-Sanford Test in Geometry by contrast is a survey test which provides measurement for a year's progress in geometry. It is timed and provides standards of achievement.

V. PROFESSIONAL LITERATURE

1. *The Reorganization of Mathematics in Secondary Education.* Boston: Houghton Mifflin Company.

This reprint of Part I of the *Report of the National Committee on Mathematical Requirements* will be greatly appreciated by teachers and curriculum makers. It discusses the following topics: Aims of

Mathematical Instruction; Mathematics for Years Seven, Eight and Nine; Mathematics for Years Ten, Eleven and Twelve; College Entrance Requirements; List of Propositions for Plane and Solid Geometry; The Function Concept in Secondary Mathematics; and Terms and Symbols in Elementary Mathematics.

2. *The Teaching of Junior High School Mathematics.* By D. E. Smith and W. D. Reeve. New York: Ginn and Company.

Easily the most useful treatment of the purposes, materials, and methods of teaching mathematics in grades seven, eight, and nine.

3. *Teaching Arithmetic in the Primary Grades.* By R. L. Morton. New York: Silver, Burdett and Company.
Teaching Arithmetic in the Intermediate Grades. By R. L. Morton. New York: Silver, Burdett and Company.

In these two volumes the author has presented clearly and convincingly not only his *opinions* concerning many of the "issues" in teaching arithmetic, but much data collected from classroom investigations.

4. *What Arithmetic Shall We Teach?* By G. M. Wilson. Boston: Houghton Mifflin Company.

For years Professor Wilson has sought to build the curriculum in arithmetic around "social needs" rather than around the "theory of number." In this little monograph he outlines such a course in arithmetic, justifying his recommendation by data heretofore unpublished.

VI. SCIENTIFIC STUDIES AND INVESTIGATIONS

It would be needless duplication of work for the writer to summarize the investigations and scientific studies that have been published during the past year. Those who are interested in the more quantitative type of research in the teaching of mathematics know of Professor G. T. Buswell's annual summaries, which are published in the *Elementary School Journal.* His summary for the year 1926 appeared in the May and June issues of that journal.

THE CLEARING HOUSE

THE ACTIVITIES CONNECTED WITH THE BUYING OF A PICTURE OF COLUMBUS

About the middle of October the fifth grade was studying various pictures of Columbus and trying to find the one which best represented him according to history. The A section selected Piombo's portrait as the best representation. Martha proposed that the class buy a copy of this picture for its main classroom. Under the direction of the student teacher, a committee was appointed to present the proposal to the B section in the other room and to the grade supervisor. The B section did not at first wish to have a part in the purchasing of a picture which would not be hung in its room, but when one pupil suggested that they might at least find how much it would cost and then decide, the undertaking was fairly launched.

Catalogues had to be ordered. To do this the pupils had to learn to write business letters. The children brought some sample letters from home and studied these, as well as forms given in various language books. They decided on the best form to use and talked about what should go in the body of their letters. The class selected and mailed the best letter written to each of several picture houses and in return received their catalogues.

When the catalogues came they were put on the table where all the children could get them. They learned how to use the catalogues to find the picture they wanted and what was meant by 9 x 12, 12 x 16, 18 x 22, etc. The class drew the various sizes of the portrait on the board and decided an 18 x 22 size would look best in the space where the picture was to be hung. An 18 x 22 size of Piombo's portrait of Columbus in sepia cost five dollars, in color, ten dollars. The class wanted to get it in color.

How to raise the money was the next question. One pupil proposed that each child should bring some money from home, but the teacher said that would really be their parents buying the picture. A rummage sale, the giving of a play, the selling of candy, and a bazaar were proposed. The teacher thought the bazaar had the greatest possibilities and led the pupils to decide on this for raising the money. The teacher reminded the children that a rummage sale had recently been held in the town and even if they could get the old clothes for another rummage sale, they might not sell easily. She asked the pupils if they did not think going from house to house to ask people to buy candy was too much like begging for help with their picture. The third grade was at that time getting up a play to raise funds. One child said that she thought that the third grade would think the fifth grade was taking its idea. When the class voted on these four ways of raising its money, the vote was almost unanimous for the bazaar.

The time and place for holding the bazaar were discussed. Pearl said that people bought more at Christmas time, and the grade decided to have the bazaar at the Training School the day before the school closed for the Christmas holidays. That gave the class about five weeks to get ready. In the sewing periods the girls made bean bags and hot pan holders. In the drawing periods the girls and boys made pretty boxes containing balls of red or green cord, Christmas cards, book marks, and Christmas candy boxes. The domestic science class at the college made candy, the grade paying for the materials

out of the proceeds of the sale. Some of the mothers of the pupils also gave candy. The cost of the articles was determined and the price of each was fixed in an arithmetic period and the price signs were made by the pupils. One boy insisted that they sell ice cream, but after figuring the cost of making the cream, the grade thought it best not to undertake the sale of it.

One girl said she thought a larger crowd could be got if on the day of the bazaar a free entertainment were given. A Christmas play was suggested and the teacher said each section might write a play. The pupils read at home and at school a number of Christmas stories, trying to find one they could make into a play. The A section finally wrote a play based on "The Sabot of Little Wolf." The B section wrote an original play. The pupils studied the form in which plays are written. Christmas carols were woven into both plays. The music periods were used for practicing the carols and the language periods for writing and practicing the plays. As the plays were quite different, both sections were allowed to produce their plays.

The bazaar had to be advertised. Charles asked that he might go over to the college to tell the students assembled at chapel about the plays and the bazaar. When questioned as to whether he could speak before so many people, he said he knew he could do it better than anyone else in the grade. Coy doubted Charles' being able to do it well and said that Elizabeth could do it better. The pupils decided to let anyone who wished to do so speak before the grade in the language period. The following day most of the pupils gave talks that had been prepared outside of class. Suggestions were made by the class for improving each talk. The next day there was a final try-out, Charles winning in spite of the boastful attitude he had previously shown. Notices of the plays and bazaar were written in a language period and sent to the other grades. Letters inviting the Director of Training and the principal of the Training School were written and the best one was selected by the class and sent. Notes were written to the supervisors of music, drawing, sewing, and cooking, thanking them for their help with the bazaar and extending to them a special invitation to the plays. In nearly every case, these notes were answered and the letters posted on the bulletin board.

Every child had a chance to help sell on the day of the bazaar. A student-teacher was in charge and had the children take turns helping her. Practically everything was sold. After all bills were paid, the class found that it had a balance of $13.41. A gift of one dollar increased the amount to $14.41. This was received just as the school closed for the Christmas holidays, and the first thing the pupils did after the holidays was to write a note thanking the giver.

The frame of the picture cost five dollars. How could they make the additional fifty-nine cents for the frame and enough to pay the express on the picture? The Physical Education Department needed more bean bags and the fifth grade offered to make them. The girls had bought beans to fill the bags that they made for the bazaar. They decided that they could make more on their bags if they were filled with corn. The boys and girls from the country brought corn donated by their fathers. The girls made the bags and found that they could sell the thirty bean bags for $2.50 and clear $1.60. After the Physical Education Department had been told that they could have the thirty bags for $2.50, Coy argued that they were selling the bean bags too cheap, that they should tell the Physical Education Department that they could not have the bags for

less than ten cents apiece. The ethics of going back on a bargain was discussed and Coy said he had not thought before of its being wrong.

The bill had to be presented for the bean bags. The class studied forms of bills to find how to make out their bill. Woodrow and Elizabeth brought enough bill forms from their fathers' stores for each pupil to have one. After studying these and the forms given in their arithmetics, the class practiced making a bill. Then the bill was copied and the best one presented. When the check for the bean bags was received, the teacher raised the question, "How to get the money?" A receipt was given the Physical Education Department by the grade for the $2.50.

The picture was framed at an art shop in Richmond and was delivered about February first. Mrs. B., the mother of one of the pupils, worked in the express office. She paid the express charge on the picture before sending it to the Training School. The next day the grade wrote Mrs. B. a note thanking her for paying the bill.

The teacher talked with the pupils about the hanging of the picture. So many people had helped with its purchase that the pupils decided to have an entertainment and invite their parents and friends to see the picture when hung. They wanted to give a program on Columbus. Each child took a different history to read about Columbus, and then the class talked about how Columbus' discovery of America could be made into a play. The language periods for three days were used in writing the play, and several more days were given to practicing it. An Indian dance which the class had learned in the physical education periods was used in the second act of their play. The class prepared for oral reading Joaquin Miller's "Columbus" and selected the one who read it best to read it for the guests. The class talked about what should be included in the presentation of the picture and selected Mary to present it. Copies of the following program were made in a writing period and were given the guests when they came:

PROGRAM

1. Reading—Columbus, by Joaquin Miller .....Margaret Birdwell
2. A Play—A Weaver's Son Seeks the East and Finds the West.

Act I—Scene 1

Outside the court of King Ferdinand and Queen Isabella

Scene 2

Before the Court of the King and Queen

Act II

Return of Columbus to Spain

3. Presentation of the picture to the Training School .....Mary Diehl

Invitations were written and sent to their parents and friends by the pupils.

One boy proposed that, with its balance of $1.01, the class might buy ice cream for the entertainment. The class was asked to determine how much cream it would take and the cost of it. When the pupils found that they could not afford ice cream, some one suggested that the pupils ask their mothers to make candy for the party, but the teacher said that she did not think it nice to invite guests and then request them to furnish the refreshments. It was finally decided to serve hot chocolate and cakes. The class found it would take a gallon of milk. Five children from the country volunteered to bring the milk. This introduced the class to liquid measure at the time when the pupils were ready to take up their study of denominate numbers. A committee was appointed to buy the cakes, the cocoa, and the marshmallows for the chocolate. The committee spent $1.00 of the class' balance of $1.01. Every child who had no part on the program

helped either to make or to serve the chocolate.

The picture was presented to the principal for all future pupils of the fifth grade, but the pupils who bought it will always feel a special interest in the picture. Much of the work of the grade for four months centered around the buying of this picture and never once did the class lose interest in it.

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A LESSON IN INTEGRATION

A group of ninth grade boys were leaving the Oriental nations after five weeks of wayfaring. They had traversed Asia from outer edge to center. They had peered over the great wall to glimpse the immensity of China, scaled the Himalayas to win the wealth of India, drifted from the desert bay into the fertile crescent to lay foundations for the future. They had labored in Egypt with pyramid builder and heretic king and had voyaged with peaceful Phœnician. They had sinned and sorrowed with the Hebrews, exulted with Nineveh and Babylon, journeyed with Hittite and Aramæan, and spread abroad the far-flung empire of Persia. They had worked as they went, reading and rhyming, memorizing and modelling. At length victorious, bearing as spoils the life-work of each nation, they raised a cry of "Victory and Westward Ho!" and turned their faces toward Europe, eager to win other worlds that they might deliver to them the fruits of their conquests. It was in this spirit that they worked out an act in which they offered to Greece, about to enter into the family of nations, everything worth while they had gained from the East.

The plan was discussed some days in advance of the lesson and volunteers were called for. They were quick to respond, a boy to represent each country. These in turn asked for assistants to help provide suitable illustrative material so that practically every member of the class took part in the project. Except for suggestion in the matter of books, the whole thing was planned and executed by the boys themselves. When all was in readiness, a period was given over to the presentation.

Greece, represented by the smallest member of the group, took a seat in front of the class. Then the nations, like the wise men of the East, filed by, bearing gifts for this new-born child who held out eager hands. First came primitive man bearing a tray on which were placed flint for making fire, a tiny bow and arrow, a toy dog for the domestication of animals, some grain for the domestication of plants, a little clay vessel to symbolize the making of pottery, a bit of cloth to denote spinning and weaving, some stone implements (these were real ones once used by Indians in our own county), and finally an engraved slab to betoken the beginning of art. Then came the nations, China, India, Egypt and all the others in turn, each bearing visible emblems in evidence of good faith, each making proper presentation and passing into the background.

The following will illustrate one type of speech accompanying the delivery of gifts.

Babylonia enters.

I, Babylonia, about to die, herewith make my last will and testament. To you, Greece, prospective heir of all my life-work, I hereby will and bequeath,

1st. My method of agriculture and irrigation.
2nd. My system of weights and measures.
3rd. My process of making bricks and glazed tiles.
4th. My useful sun dial and water-clock.
5th. My achievements in architecture, chiefly the tower-temple and the principle of the arch.

6th. My plan of ornamentation, especially my bas-relief.
7th. My advance in astronomy, notably the signs of the Zodiac, the fixed stars, the planets and, best of all, the calendar.
8th. My system of government and the code of Hammurabi, the most elaborate set of laws written up to this time.
9th. My knowledge of the world and its geography.
10th. My easily formed cuneiform writing and the use of seals.
11th. My literature, especially the Epic of Gilgamesh.
12th. My stately religion.

That all of these are for your use as you see fit, I call Persia to witness.
Given under my hand and seal:

Babylonia.

As each item was enumerated, some object was presented—a clay tablet with wedge-shaped characters, a leaf from the front of an almanac with the signs of the zodiac, a bas-relief of Izdubar and the Lion, and so on.

Much ingenuity was shown in selecting and providing illustrative material. Egypt brought among other things a tray of "desert" sand containing pyramids, obelisks, sphinxes, all modelled from grey lava soap, a proto-Doric column shaped from ivory soap, a canopic jar made of paraffin, an "enamelled" hawk cut from wood, then colored, the "Book of the Dead" done on yellow paper. Phœnicia offered a bottle of purple dye (there was keen competition in getting what was considered the proper shade), fine glass, a cedar of Lebanon (in this instance a little pine tree from near-by woods), examples of metal work, the alphabet, and boats. The Hebrews brought the Bible and two tablets inscribed with the ten commandments. Assyria carried a library, a palace, her triple arch, some tablets to explain her military system, a map to show a world empire. All the other nations were represented by some outstanding features of their civilization.

When finally Persia had passed on, Greece arose and said:

Countries of the Orient, I thank you for your kindness in giving me such wonderful things. Though I am young and may not know how to use them all, yet I realize that with your help I shall be able to do great things, for I can begin not at the bottom, but half-way up. Some day you will be proud of me and then you can say, "We helped to start that nation"; and not only can you say that, but you can have a secret feeling of pride in knowing that you gave instead of taking.

With this the act ended. It had served not only to summarize once more the contributions of each nation to the progress of civilization, but also to emphasize the fact that Greece was the heir of the Orient.

FLORENCE BERND,
Lanier High School for Boys,
Macon, Ga.

AS REPORTED

THE SUMMER EDUCATIONAL MEETINGS

In spite of the popularity of the summer schools, now almost universal in normal schools and teachers' colleges, the convention of the National Education Association at Seattle in July was well attended. President Blair set as the theme of the meeting, "The teachers of America, their economic, social, and professional welfare the chief concern of state and nation." The children have usually had first place, but this time even they had to yield place to the teachers. Perhaps the article "the" slipped in in place of "a."

Consistent with this theme were such topics as tenure, pensions, sabbatical leave, the relations of the teacher to the patrons, to superior officers, and to legislation. Quite fittingly the Association elected Miss Cornelia S. Adair, a teacher in a junior high school at Richmond, Virginia, president for the ensuing year.

The work of the Association went forward in general sessions, department meetings, programs of allied organizations, and the representative assembly. The latter is proving unwieldy and a committee of which Superintendent, formerly Commissioner, P. P. Claxton is chairman, was appointed to see what can be done about it. To prevent endless overlapping and uncertainty as to the status of delegates, representation will probably be organized by states. The present plan is no doubt liberal, but it is also loose.

Secretary Crabtree surveyed the progress of a decade in the history of the Association, and while he spoke with pardonable pride of the phenomenal growth in the membership—from 8,000 to over 170,000—he did not fail to emphasize the new plan of organization, the development of an adequate headquarters, and the functioning of such new services as that of the Bureau of Research, directed by Dr. Norton.

Elaborate resolutions were prepared by a committee in charge of Professor George D. Strayer and acted upon seriatim. The topics covered included salaries, courses of study, training, grouping, administrative units, boards of education, a secretary of education, and others. The full text was printed in *School and Society* for August 13.

WORLD FEDERATION OF EDUCATION ASSOCIATIONS

The so-called Second Biennial Conference of the World Federation of Education Associations was held in Toronto in August as announced. (Counting the meeting at San Francisco at which the Federation was organized, this was the third, not the second, Conference.) This organization is in theory a gathering of delegates from nationwide associations of educators in various civilized countries. In fact, the meetings of bona fide delegates take place in the midst of a great concourse, in this case estimated to number over seven thousand persons. Of course the bulk of these come from the country in which the convention happens to be held. It was announced that the Federation is at present composed of 21 associations that have full membership and 12 that are associated.

Aside from the general sessions, meetings of some 19 departments or subdivisions were held. These dealt with such subjects as health, library service, illiteracy, preschool education, the country school, moral and religious education, and the work of parent-teacher associations.

The custom of the Federation has been to embody the results of the deliberations of these sections in formal resolutions, to be acted upon by the delegates in assembly.

The Federation made plans for incorporation and will seek a large endowment. Dr. A. O. Thomas, State Commissioner of Education for Maine, was continued as president.

A SCHOOL LIFE RECORD

The analysis of good school conduct that is used in the John Muir School in Seattle is so suggestive that we reproduce it in full. The head of this school, Miss Lockwood, is one of the most successful principals in the country in making the total experience of being a member of the school community highly educative. The pupils of this school accept responsibility and discharge it.

ANALYSIS OF SCHOOL LIFE RECORD—JOHN MUIR SCHOOL

I. Posture.

Your appearance as you pass by is your only message to most of the world.

1. Holds head erect, chest high, while walking, standing, sitting.
2. Walks with light step, a free swing, and with a purpose.

II. Courtesy.

Courtesy is an expression of character, of home training, of school spirit. Good manners reveal good breeding.

1. Considers the rights of others.
   a. In recitation and classroom.
   b. In halls and public assemblies.
   c. On playground.
2. Is thoughtful of those who are younger, weaker, and older.
3. Talks and laughs quietly.
4. Is respectful.
5. Shows a spirit of helpfulness to others.

III. Good sportsmanship.

Clean play increases and trains one's strength, and helps one to be more useful to one's country. As we learn better how to work together, the welfare of our country is advanced.

1. Is a good loser and a generous winner.
2. Stands for fairness in work and play.
3. Treats opponents with courtesy.
4. Works for his team rather than for himself.
5. Is willing to take his turn.
6. Takes responsibility for his own acts, and is willing to admit a fault.

IV. Cheerful coöperation.

The health and happiness of each one of us is utterly dependent upon the health and happiness of everyone else. No one can be fully blessed in any community until the blessing rests on all.

1. Enters heartily into school activities or gives hearty support.
2. Does his part in recitation and other school work.
3. Responds cheerfully and promptly to request of those in authority.
4. Tries to understand and follow directions the first time they are given.

V. Thrift.

I believe in the United States of America. My opportunity and hope depend upon her future. I believe that her stability and progress rest upon the industry and thrift of her people.

Therefore, I will work hard and live simply. I will spend less than I earn. I will use my earnings with care. I will save consistently. I will use my money and my talents to insure the greatness of America's future.

1. Responds promptly to signals and does not waste school time.
2. Concentrates upon the task at hand.
3. Employs efficient methods of work.
4. Does not waste pencils, paper, or other materials.
5. Keeps books in good condition.
6. Is orderly in arrangement of work and desk.

VI. Good workmanship.

Nothing is good work except the best of which one is capable.

1. Prepares his work thoroughly, doing good work day by day.
2. Is accurate in his work.
3. Thinks clearly and purposefully.
4. Expresses himself clearly and with good articulation.
5. Is not satisfied with merely passable work; has high standard of work and tries to measure up to it.

VII. Reliability.

Our country grows great and good as her citizens are able more fully to trust one another.

Honesty is that sense of right which makes it impossible to take or to use that which does not rightly belong to us.

1. Hands work in on time.
2. Makes himself responsible for work which goes on in classroom while he is absent.
3. Is dependable.
4. Is prompt to school and classes.
5. Performs errands satisfactorily.
6. May be trusted to
   Tell the truth.
   Return lost property to its rightful owner.
   Do his work without unfair help.
   Take care of property belonging to another.

VIII. Self-control.

He that ruleth his spirit is greater than he that taketh a city.

1. Keeps his temper.
2. Is courteous in his language.
3. Is agreeable when he cannot have his own way.
4. Obeys requests governing halls, recitation and study periods.

IX. Initiative and self-reliance.

They can who think they can.

Everything that is worth having is hard to get. The easy things in life are not worth much.

1. Shows self-dependence after having once been shown his work or given a task.
2. Anticipates his needs and does not borrow.
3. Thinks, chooses, and acts independently.
4. Shows ambition and ability to start things without being told.
5. Shows courage and perseverance in work and play.
6. Makes suggestions as to better ways of doing things.
7. Shows the right kind of leadership and seeks opportunities for serving others.

X. Loyalty.

The honor and glory of our country depend upon the honor and loyalty of every citizen—be prepared.

1. Fosters obedience of rules which further the good of all.
2. Supports the right and opposes wrong.
3. Takes pride in the appearance of his school.
4. Speaks well of an absent schoolmate.
5. Exercises a wholesome influence in his school.

Note.—Pupils are graded on the basis of native ability, not in competition with their fellow students. This grading is necessarily confined to what is apparent in their school life.

Grading (underline one):

Exceptionally well developed. Good. Needs developing.

THE YEARBOOK ON SUPERVISION

As already announced, the National Conference on Educational Method will publish a Yearbook on Supervision. The committee in charge, under the chairmanship of Dr. L. J. Brueckner, Director of Instructional Research, Minneapolis, has completed the gathering of contributions. These will be edited by a sub-committee composed of Dr. Brueckner, Professor William H. Burton, of the University of Chicago and president of the Conference, and Professor James F. Hosic, of Columbia University, its secretary; the final report will be ready for distribution about January 1, 1928.

The report as a whole will be made up largely of the results of investigation and will prepare the way for succeeding reports dealing with the improvement of the status of supervisors, their qualifications, new techniques, and similar topics. The character and scope of the report may be seen in the following outline, which is subject to some modifications in the finished work.

OUTLINE OF THE YEARBOOK ON SUPERVISION

1. A statement of the problem and the scope of the yearbook.

   The yearbook is to be limited to the supervision of classroom instruction.
2. The development and present status of supervision as revealed by quantitative studies that have been made.
3. State and county supervisory programs, as illustrated by typical programs such as those of New York, Maryland, Minnesota, and other states.
4. Types of urban supervisory programs selected because they represent different approaches to the problms of supervision.
   a. Large cities, such as Detroit, Seattle, Cleveland, etc.
   b. Small cities, such as Madison, Wisconsin; San Antonio, Texas; Superior, Wisconsin; and others.
   c. Typical supervisory organizations within a school unit.
5. Administrative aspects of supervision.
   a. The job analysis of the work of the supervisor as illustrated by
      (1) Duties of principal, by Dyer.
      (2) Duties of the supervisor, as analyzed by Trabue and Ayer.
      (3) Other studies which have been made in various localities.
   b. Interrelationships of supervisors, principals, teachers, etc., as found in regulations controlling these relationships.
6. Illustrations of outstanding types of supervisory activity selected from various sources.
   a. Research and experimental investigations, such as those that are being conducted by Gray, Seaattle principals group, Hudelson, Stone, in Detroit, etc., on the evaluation of methods of teaching and the analysis of learning difficulties.
   b. The training of teachers in service.
      (1) A survey of current practices in teachers' meetings and institutes.
      (2) The use of the course of study as a supervisory technique.
      (3) Plans for training teachers in service that are in use in different parts of the country.
      (4) The stimulation of teachers to self-directed improvement.
      (5) The training of new teachers.
   c. Methods used by supervisors in carrying on their field work.
   d. Techniques of the interview, visitation, and other similar activities.
   e. Participation of teachers in programs for the improvement of instruction.
7. Methods of analyzing and evaluating classroom practice.
   a. The survey method for discovering the status of teaching in a community, as illustrated by Brim, the Minneapolis Program, and others.
   b. The objective analysis of the results of teaching by means of achievement and diagnostic tests as illustrated by Knight and others.
   c. The analytical study of classroom practice in terms of teacher and pupil activities.
   d. Job analysis techniques.
   e. Typical plans for rating teachers as illustrated by methods of rating particular lessons, the work in particular subjects, self-rating plans, etc.
8. The experimental evaluation of supervision.
   a. Scales for rating supervisors, if any are available.
   b. The experimental evidence on the value of supervision.
   c. Teachers' judgment as a basis for evaluating supervision.
9. Miscellaneous topics.
   a. Methods of research in supervision.
   b. How supervisors are trained.
   c. The philosophy of supervision.

Members of the Conference in good standing who make request in writing will receive the Yearbook on Supervision free of charge. Others may buy it at cost.

GEOGRAPHIC NEWS BULLETINS

The National Geographic Society will continue during the present school year the distribution of its *Geographic News Bulletins.* These are issued monthly at a nominal cost and contain up-to-date material of a concrete sort, both interesting and valuable. Teachers requesting the bulletins receive 30 issues in the course of the school year. Five bulletins are included in each issue, making one hundred and fifty bulletins in all. Any teacher may receive the bulletins by sending his name and school address to the National Geographic Society, Washington, D. C., provided he encloses twenty-five cents to cover the cost of mailing the bulletins.

THE JOURNAL OF CLEANLINESS

Specialization in magazine editing and publishing is the order of the day. The latest prospectus of a new periodical in the general field of education and social welfare to reach the office of this JOURNAL announces *The Cleanliness Journal,* to be published "occasionally" by the Cleanliness Institute, 45 East 17th Street, New York City. The Institute is organized for public service and will strive to disseminate information as to cleanliness and build up ideals of healthful living. Its budget for the first year has been subscribed by the producers of soap and glycerine.

THE READER'S GUIDE

PROFESSIONAL ACTIVITY IN SECONDARY EDUCATION

Not so long ago secondary education was still largely academic in point of view and in technique. If one may judge by the recent output of college texts for the study of high school problems, secondary education is rapidly becoming professional. No less than seven new publications invite notice in this brief survey.[1]

All of these books are by professors in university schools of education. This fact assures the reviewer in advance that the collection as a whole will be scholarly, well made, and redolent of the library. Actually there is a wide range of treatment, from the purely theoretical to the very practical, as will appear when we proceed.

The most abstract treatment in the collection is probably that of Williams and Rice. They have attempted to get back to fundamental principles and in so doing have succeeded in writing whole chapters with almost no specific words. Yet the book is obviously intended for beginners, college seniors perhaps, who have had no experience in teaching. For such readers the book will prove a total loss. They cannot translate the generalizations of the writers into anything real. Persons who are able to do so, moreover, will not long pause over so brief a sketch. The appearance of such a book as this raises the question as to what the function of a college textbook is—whether it should contain a body of abstract generalizations or should present definite suggestions by means of which the student can make his generalizations for himself.

Professor Uhl set himself a somewhat less comprehensive task and succeeded much better in giving the reader something concrete to work on. Keeping in mind the necessity of breadth of view in dealing with anything so difficult as the making of the high school curriculum, he sought to trace the steps in the evolution of that curriculum from primitive times to the present. He describes a primitive school and explains how primitive boys got a knowledge of literature, mathematics, science, social studies, religion, fine and applied arts, and physical education.

This is undoubtedly a good way to begin. Several of the subjects of study in the modern high school are now so far removed from actual life that their social significance is difficult to make out. Yet all of them had their beginnings in everyday human activities. It is well also to trace the formalizing process by which studies became in the secondary schools mere intellectual exercises, to be defended, not on the ground of positive social value but on that of an untested belief in formal discipline. As one comes to the end of the book, he is ready to turn to the practical problem of organizing courses of study in a particular situation. That, of course, is "another story."

[1] *Principles of Secondary Education.* By L. A. Williams and G. A. Rice. Ginn and Co.
Secondary School Curricula. By Willis L. Uhl. Macmillan Co.
Modern Methods in High School Teaching. By Harl R. Douglass. Houghton Mifflin Co.
Problems in Classroom Method. By Douglas Waples. Macmillan Co.
Directing Learning in the High School. By Walter S. Monroe. Doubleday, Page and Co.
Tests and Measurements in High School Instruction. By G. M. Ruch and George D. Stoddard. World Book Co.
The Scholarship of Teachers in Secondary Schools. By Edward A. Fitzpatrick and Percival W. Hutson. Macmillan Co.

Three of our authors deal with methods of teaching. Professor Douglass develops his theme in systematic fashion, first setting forth the outcomes to be aimed at and then treating in successive chapters various aspects of classroom technique. Like most writers in this field, he appears to recognize no philosophy of method but sums up current discussion and practice under such conventional headings as questioning, assignment, socialized class procedure, quizzes, etc. Like Stormzand, to whom he refers, he follows Parker and some others in trying to distinguish problem and project. He gives the question up and actually lists as projects several questions in various high school studies that correspond exactly to what Parker calls problems. Fortunately he seems to recognize that the pupil's attitude is one of the determining factors, and avoids the mistake of treating a project as a mere unit of subject matter.

The ground covered is fairly extensive; the closing chapters deal with such matters as examinations, tests, individual instruction, and the technique of controlled classroom experimentation. Like the companion numbers in the Cubberley series, this one is liberally supplied with apparatus to adapt it for use as a textbook. The outline is inclusive, the bibliographies are extensive, and the whole will serve very well as a basis for the study of method, provided the class adopts a critical attitude throughout and seeks to arrive at its own solutions of the problems discussed.

What Superintendent Stark, in a brief informal way, did for the elementary schools, Professor Waples in an exhaustive and systematic way has done for high schools. He has collected hundreds of problems in high school teaching, classified them, and proposed solutions. No troubled soul will fail to find somewhere in this monumental work just the help he is looking for, except—a central philosophy of life and education to which all of these numerous principles of procedure might be referred and by which their validity might be tested

The treatment throughout is empirical. This is to say that the author gathered his problems of method from teachers at work and arrived at his solutions in the same way. He has shown both untiring zeal and great organizing ability in doing so. It is perhaps gratuitous to remark that much of the advice offered will seem to experienced teachers obvious. The author will doubtless reply that what experienced teachers already know they need not linger over. The most serious criticism seems to the reviewer to be that the woods in this forest tend to obscure the trees. How is anyone to keep so many injunctions in mind? And how is he to be sure which of them applies to the difficulty at hand? Why not show that most of them are but corollaries, anyway, of a few fundamental principles?

Professor Monroe avoids calling his book methods of teaching by using the expression "directing learning." His preface informs us, however, that the theme is really methods of teaching and that this volume is one of three intended for high school teachers in training. The author claims that he has made more use of recent scientific investigations than his predecessors, and this claim seems to be justified. The text is well documented throughout, and the pages are so heavily laden with learning that the college undergraduate will probably find the going heavy. As for the "eclectic" philosophy which the author professes, it is not obtrusive, to say the least. The point of view is scientific rather than philosophic.

The basic formula of the book may be said to be the current analysis of human abilities into knowledges, skills, habits, and so forth. The language accordingly is

largely psychological, so that the whole might not unjustly be called an applied psychology. High school instruction is supposed to begin with the seventh grade, before which the pupil will have attained some degree of mastery of the "tool subjects." The time-honored high school organization and curriculum are assumed throughout.

The most interesting feature of the book is the series of learning exercises for the reader that are appended to the chapters. We would suggest that any college professors who contemplate using this book as a text in their classes first read it carefully themselves, not neglecting to do all of the exercises!

If one wishes to know what progress has been made in devising objective measures of high school instruction and of applying statistical technique to the results obtained by them, he can do so by perusing the neat volume by Ruch and Stoddard. He will find that the authors recognize five legitimate uses of such tests, namely, in supervision, in determination of special disabilities, in classification of pupils, in research, and in the motivation of learning. The attitude assumed is judicial throughout. The authors realize how much harm ill-informed enthusiasts have already done to the testing movement and they are careful to point out the limitations that must be observed.

General, or so-called intelligence, tests are discussed as well as specific, or subject-matter, tests and scales, and new-type classroom examinations come in for a share of attention as well. The book as a whole is clearly and simply written and will undoubtedly serve to orient many who would otherwise "wonder what this testing movement is all about."

Our last is a volume devoted to pure scholarship. Written in a contest, it obtained the Sachs Prize for 1926. Two classes of persons may well find it of immediate value and interest—school officials who wish to know how their secondary staff compares with others in academic acquirements and members of college faculties who are entrusted with the task of laying out courses and setting up requirements for students seeking diplomas and recommendations in the high school field. The term scholarship is used in this book in the ordinary academic sense. It might well have a different connotation.

SIGNIFICANT ARTICLES

PROBLEMS OF THE PRINCIPALSHIP

Dr. J. Cayce Morrison, now of the Department of Education of the State of New York, has been for some years a student of the problems of the school principal. In the *Educational Review* for September he sums up in a series of pointed paragraphs twelve of these problems. Principals, he thinks, must make better preparation for their work in order to be able to lead the teachers of their schools, who are rapidly approaching higher standards. To preparation should be added successful experience that he believes will be recognized by suitable increases in salary. The present average in such a state as Ohio, which is less than $3000, he thinks quite inadequate.

One outstanding need is that for clerical assistance, which at present is supplied to only about half of the principals in that state. Other problems trenchantly discussed are those of suitable equipment, the schedule of the day's work, principal's responsibility for supervision, principal's relation to the superintendent's office, his obligation to the community, and his opportunities as a professional leader.

The article as a whole serves as a fitting forerunner of the report of the National Committee on Qualifications and Training of Elementary School Principals.

WHY TEACHERS FAIL

The most recent study of the causes of failure in teaching appears to be that of Professor Morrison of the Colorado State Teachers College, reported in *Journal of Educational Research* for September. He investigated the degree of success attained by graduates of that institution by interviewing several hundred school superintendents and members of school boards who came to the college in quest of teachers. The results of his inquiries are presented in a series of tables in which, under some eleven headings, he sums up the main points made by those he interviewed. These are, in order: poor discipline, inability to coöperate; gossip; immorality; lack of teaching skill; disloyalty; inability to adjust to the situation; unwise choice of companions; lack of desire for professional growth; irresponsibility; and criticism of colleagues.

He concludes that most of the causes of failure listed could easily be removed or avoided by the teachers.

EDUCATIONAL RESEARCH

Dr. Guy M. Whipple, now a free lance in education, has long been known as a specialist in educational research. In an address before the California Educational Research Association some weeks ago, he set forth a number of principles that should be followed by those who would improve the technique of educational research. The outstanding among these are that the investigator should know thoroughly the work of those who have preceded him in the field; that he should make certain that he has formulated a problem that will lend itself to research; that the work shall include carefully directed observation; that before the actual investigation is entered upon, a preliminary trial should be made to uncover flaws in technique. The address continued with an exhaustive analysis of the proper use of measurements and statistics and the intelligent presentation of results.

The address as a whole provides a useful guide to educational research. It will be found in *School and Society* for August 27.

REPETITION IN PUBLIC SPEAKING

Educators who have frequent occasion to speak in public will find excellent advice as to how to make themselves understood and remembered in the *English Journal* for September. The writer, Mr. Lionel Crocker, has made an interesting study of methods employed by many well-known speakers such as Edward Amherst Ott, Russell A. Conwell, Marion L. Burton, and Booker T. Washington. He finds that these popular speakers made constant use of the principle of repetition. In a single short address by the late President Burton, for example, the words "religion" and "religious" were used no less than eighty times. In a similar way the late President Washington is shown to have begun sentence after sentence in the same form so as to drive home the idea that he had in mind. Those who are in the habit of writing out their speeches and reading them from manuscript—to the great distress of their audiences, who would like to follow, are unable, but do not know what the trouble is—will do well to read and reread this brief article and act upon its suggestions.

CREATIVENESS IN EDUCATION

The latest shibboleth is creative education, a title popularized by Hughes Mearns in his book on the teaching of English in the Lincoln School. The September number of *Childhood Education* is given over almost entirely to a series of short accounts of experience by classroom teachers in seeking to develop creative expression in

little children. Miss Pierce writes of her work in the Observation Kindergarten in the Cleveland School of Education, Miss Wright similarly of work in the Lincoln School, New York, Miss Whittier of the Massachusetts School of Art, Boston, and Miss Brown of the Ethical Culture School, New York. Story-telling, language, dramatization, drawing, and rhythm all come in for concrete illustration. The articles are enlivened by examples of the actual work of the children. The whole is prefaced by a brief article on "The New Authorities," by Mr. Mearns himself, who believes that our success in getting away from formal education will come mainly through those who do the work with the children themselves and through those who are able to observe and appreciate what they do.

LITTLE ART MUSEUMS IN SCHOOLS

No one in America has been more consistent in his effort to develop love of art on the part of all the people than Lorado Taft of Chicago. In a recent number of the *Chicago Schools Journal* he makes the happy suggestion that every school should have a small collection of casts of great pieces of sculpture. Success in organizing such collections, he says, will depend, first, upon a wise selection and, second, upon the proper placing and adequate lighting of them. As an aid to schools who may be interested in the idea and wish to develop museums for themselves, he offers a suggestive list for a five hundred dollar "museum" of casts, with the price of each. The list is supplemented by a shorter list of more important casts that might be added when funds will permit. He also gives brief but clear directions as to how to place the casts when they have been purchased. The article, which is illustrated with examples of the casts that are recommended, should have a wide influence in stimulating schools to develop museums and, through them, better appreciation of classic sculpture.

THE NEW BOOKS

The Scholarship of Teachers in Secondary Schools. By Edward A. Fitzpatrick and Percival W. Hutson. New York: Macmillan Co., 1927. Pp. 208.

Economic Life and the Curriculum. By Henry Harap. New York: Macmillan Co., 1927. Pp. 188. $1.25.

Secondary School Curricula. By Willis L. Uhl. New York: Macmillan Co., 1927. Pp. 582.

On Being a Girl. By Jessie E. Gibson. New York: Macmillan Co., 1927. Pp. 326.

Educational Psychology. By Daniel Starch. New York: Macmillan Co., 1927. Pp. 568. $2.60.

Mental Hygiene. By Daniel W. LaRue. New York: Macmillan Co., 1927. Pp. 443. $2.20.

An Introduction to Psychology. By John J. B. Morgan and A. R. Gilliland. New York: Macmillan Co., 1927. Pp. 319. Illus.

The Scarlet Letter. By Nathaniel Hawthorne. Modern Reader's Series. New York: Macmillan Co., 1927. Pp. 361.

Preschool Education. By Ilse Forest. New York: Macmillan Co., 1927. Pp. 413.

Extracurricular Activities. By Harry C. McKown. New York: Macmillan Co., 1927. Pp. 617.

Directing Learning in the High School. By Walter S. Monroe. Garden City, N. Y.: Doubleday, Page & Co., 1927. Pp. 577. $2.50.

Essentials of Spanish. By Arturo Torres. Garden City, N. Y.: Doubleday, Page & Co., 1927. Pp. 414. Illus.

The Making of Our United States. By R. O. Hughes. New York: Allyn and Bacon, 1927. Pp. xviii + 607 + lx. Illus. $2.00.

Robinson Crusoe. By Daniel Defoe. Abridged and edited by Joseph G. Cohen. New York: Allyn and Bacon, 1927. Academy Classics for Junior High Schools. Pp. 388. Illus. $1.00.

The Principles of Physical Education. By Jesse F. Williams. Philadelphia: W. B. Saunders Co., 1927. Pp. xxv + 481. Illus. $3.00.

Stone's Silent Reading. Book Five. By Clarence R. Stone. Boston: Houghton Mifflin Co., 1927. Pp. 290. $.92.

The Reorganization of Mathematics in Secondary Education (Part I). A Report by the National Committee on Mathematical Requirements. Boston: Houghton Mifflin Co., 1927. Pp. 181. $1.20.

Teaching in the Intermediate Grades. By George E. Freeland, Roxana M. Adams, and Katharine H. Hall. Boston: Houghton Mifflin Co., 1927. Pp. 398.

Physiology and Human Life. By Robert A. Budington, New York: Silver, Burdett & Co., 1927. Pp. 431. Illus.

Teaching Arithmetic in the Primary Grades. By Robert L. Morton. New York: Silver, Burdett & Co., 1927. Pp. 242.

Teaching Arithmetic in the Intermediate Grades. By Robert L. Morton. New York: Silver, Burdett & Co., 1927. Pp. 354.

The Problem of Industrial Education. By Arthur B. Mays. New York: Century Co., 1927. Pp. 416. $2.25.

Human Waste in Education. By Anna Y. Reed. New York: Century Co., 1927. Pp. 449. $2.50.

Teachers College, Columbia University, New York: Contributions to Education, 1927. No. 250, *The Courts and the Curriculum,* by Otto T. Hamilton; pp. 168. No. 251, *The History and Significance of Certain Standard Problems in Algebra,* by Vera Sanford; pp. 102. No. 255, *An Objective Determination of Stories and Poems for the Primary Grades,* by Mary E. Nesmith; pp. 85. No. 256, *The Training of Modern Foreign Language Teachers for the Secondary Schools in the United States,* by Hugh Stuart; pp. 111. No. 257, *Education in Utopias,* by Gildo Masso; pp. 200. No. 258, *Social Participation in a Rural New England Town,* by James L. Hypes; pp. 102. No. 260, *The Relation Between Early Language Habits and Early Habits of Conduct Control,* by Ethel B. Waring; pp. 125. No. 261, *Education and the Integration of Behavior,* by Meredith Smith; pp. 93. No. 264, *The Measurement and Interpretation of School Building Utilization,* by Edgar L. Morphet; pp. 102. No. 274, *Activities of the Elementary School Principal for the Improvement of Instruction,* by William P. Dyer; pp. 102.

Accounting Procedure for School Systems. By Fred Engelhardt and Fred von Borgersrode. New York: Teachers College, Bureau of Publications, 1927. Pp. 130. School Administration Series.

Essays in Comparative Education. Republished Papers. By Paul Monroe. New York: Teachers College, Bureau of Publications, 1927. Pp. 258.

Homemaking as a Center for Research. Report of the Teachers College Conferences on Homemaking, March 2–April 20, 1927. New York: Teachers College, Bureau of Publications, 1927. Pp. 122.

New York at School. By Josephine Chase. New York: Public Education Association (8 West 40th St.), 1927. Pp. 270.

IN PAPER COVERS

University of Iowa, Studies in Education, 1927; Vol. III: No. 7, *A Study of the Causes of Scholastic Deficiencies in Engineering by the Individual Case Method,* by Arthur A. Ohmann; pp. 58; $.50. No. 8, *An Experimental Study of Guid-*

ance and Placement of Freshmen in the Lowest Decile of the Iowa Qualifying Examination, 1925, by Allan C. Lemon; pp. 135; $1.00.

Twenty-eighth Annual Report of the Superintendent of Schools for the Year Ending July 31, 1926. New York: Board of Education, 1927. Pp. 786.

Thirty-second Annual Report of the John Crerar Library. Chicago (86 East Randolph St.), 1927. Pp. 61.

A Graded Spanish Word Book. Compiled by Milton A. Buchanan. Toronto: University of Toronto Press, 1927. Pp. 195.

A Coöperative Report of Studies of the Curriculum and of Supervision. Second Yearbook, Chicago Principals' Club (315 Plymouth Court), 1927. Pp. 151.

Secondary Education in Virginia. University of Virginia Record Extension Series, Vol. XI, No. 10, April, 1927. Pp. 117.

University of Southern California Studies, Second Series, 1927: No. 1, *Studies of Secondary School Graduates in their Mastery of Certain Fundamental Processes.* By Frank C. Touton, Karl K. Heilman, and Esther J. Terry; pp. 56. No. 2, *School Housing Survey for the Monrovia Union High School District,* by Osman R. Hull and Willard S. Ford; pp. 48. No. 3, *Achievement in the Elimination of Errors in the Mechanics of Written Expression Throughout the Junior-Senior High School,* by Walter H. Potter and Frank C. Touton; pp. 24.

The Coach and Four. A Collection of Poems, Stories, and Illustrations by Hutchins Intermediate School, Detroit, Mich., 1927. Pp. 38.

Report of Kern County, California, for the Fiscal Year 1925-26. Los Angeles, Cal.: California Taxpayers' Association (775 Subway Terminal Building), May, 1927. Pp. 78.

Detroit Reading Test. By Claudia M. Parker and Eveline A. Waterbury. Yonkers, N. Y.: World Book Co., 1927.

A Year in Review—Twelfth Annual Report. New York: National Committee for the Prevention of Blindness (370 Seventh Ave.), Publication No. 32. Pp. 32.

Arithmetic Practice. For optional use with McMurry and Benson's *Social Arithmetic* but usable with any basal text. Third Grade, pp. 104; Fourth Grade, pp. 132; Fifth Grade, pp. 119. $.48 each. New York: Macmillan Co., 1927.

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